# Railway Age

SECOND HALF OF 1918—No. 14 SIXTY-THIRD YEAR

NEW YORK: WOOLWORTH BLDG.
CHICAGO: Transportation Bldg.

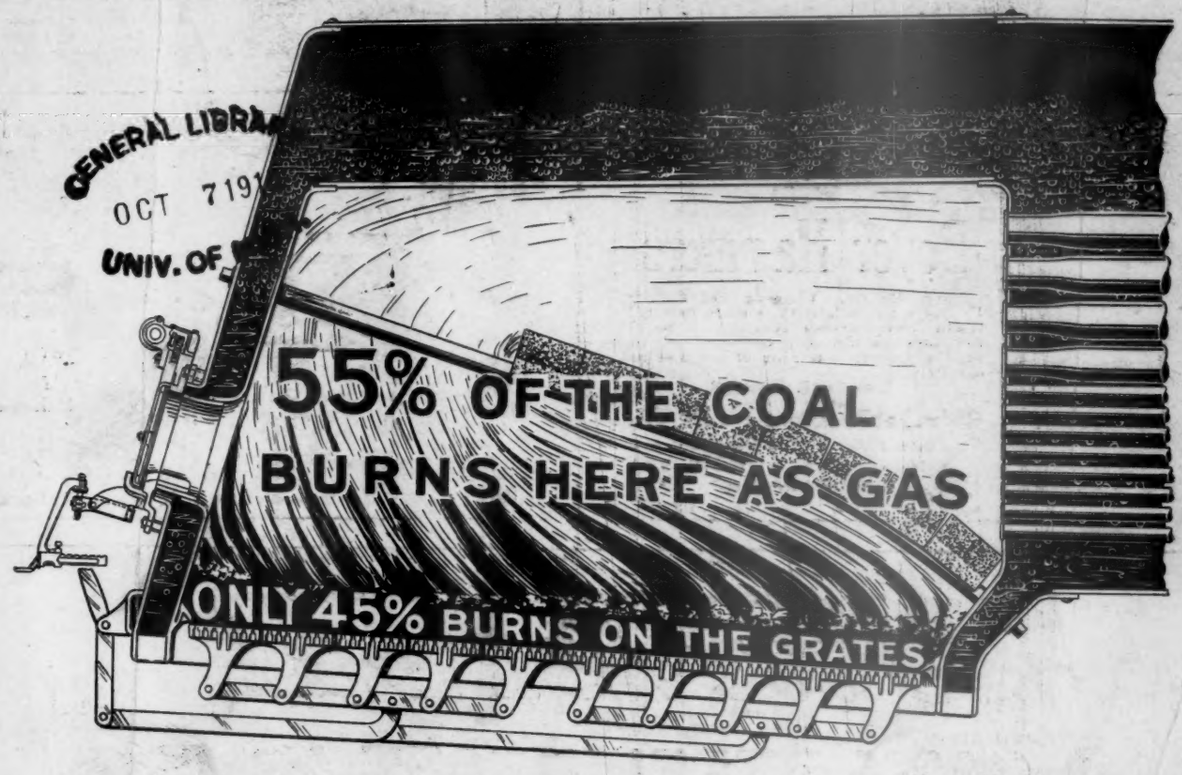
NEW YORK—OCTOBER 4, 1918—CHICAGO

WASHINGTON: Home Life Bldg.
CLEVELAND: Citizens Bldg.

Published weekly. Subscription Price, United States and Mexico, $5.00 a year; Canada, $6.00; foreign countries (excepting daily editions), $8.00. Entered as second-class matter at the post office at New York, N. Y., under the act of March 3, 1879.



GENERAL LIBRARY
OCT 7191
UNIV. OF


Security Sectional Arch

To know what an arch does is to recognize its importance. Most of all in War Transportation.

Arches complete the combustion where over half of the coal burns—as a gas above the fuel bed.

This is why the arch gives 16% increased capacity per pound of coal burned.

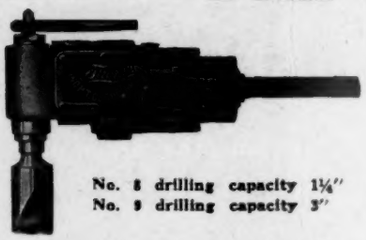

Alphabetical Index to Advertisements, Page 5. Classified Directory of Advertisers, Page 6.

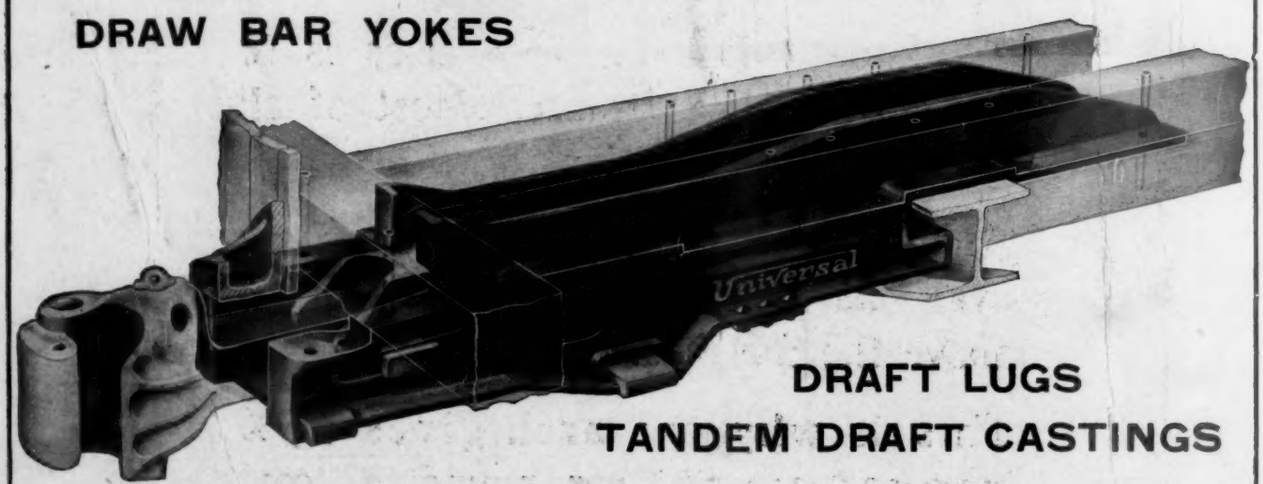
CHASE
Leatherwove
The long-wearing, rich-appearing upholstery material—inexpensive and distinctive.
L. C. CHASE & CO., Boston
NEW YORK DETROIT CHICAGO SAN FRANCISCO
The standard upholstery for over a third of a century—grades for all uses.
CHASE
Goat Brand Car Plush

Chicago-Cleveland Car Roofing Company
Manufacturers of
Steel Roofs and Carlines for Freight Cars
635 Railway Exchange Bldg., Michigan & Jackson Blvds., Chicago

Finishing
Aeron System
Surpasses Brushing
PORTABLE PAINTING EQUIPMENT
Let us explain how it paints FIVE TIMES FASTER than hand-brushing.
The DeVilbiss Mfg. Co. 1278 Dorr St., Toledo, O

Speed Up Production with
Boyer Hammers
Boyer Riveting, Chipping and Calking Hammers are made in three parts, cylinder, handle and valve—a construction which facilitates examination, cleaning and repairs and extends the life of the tool indefinitely.
Write for Bulletin 124.
Chicago Pneumatic Tool Co.
1024 Fisher Bldg. Chicago
52 Vanderbilt Ave. New York
Branches Everywhere
A-7

Thor Close-Corner Drill
Most Convenient Air Tool Made for Use in Close Quarters

No. 8 drilling capacity 1¼"
No. 9 drilling capacity 3"
Shipped on Trial
Ask for Bulletin
Independent Pneumatic Tool Co.
Chicago New York Pittsburgh Detroit San Francisco Montreal Birmingham

Universal
CAST STEEL DRAFT ARMS
DRAW BAR YOKES


DRAFT LUGS
TANDEM DRAFT CASTINGS
Universal Draft Gear Attachment Co.
Railway Exchange Building CHICAGO

*Every electrical engineering and manufacturing facility of this company is being applied "without stint or limit" to the vital business of winning the war*

# *The Fourth Liberty Loan*

AGAIN the Government comes to the people of the country with the request that they lend their money, and lend it upon a more liberal scale than ever before, in order that the great war for the rights of America and the liberation of the world may be prosecuted with ever-increasing vigor to a victorious conclusion. And it makes the appeal with the greatest confidence because it knows that every day it is becoming clearer and clearer to thinking men throughout the nation that the winning of the war is an essential investment. The money that is held back now will be of little use or value if the war is not won and the selfish masters of Germany are permitted to dictate what America may and may not do. Men in America, besides, have from the first until now dedicated both their lives and their fortunes to the vindication and maintenance of the great principles and objects for which our Government was set up. They will not fail now to show the world for what their wealth was intended.

Woodrow Wilson

## *Buy United States Government Bonds of the Fourth Liberty Loan*

**The time to win the war is NOW, It will take money.**
**Unless it is won everything you possess is lost.**

90-50-G

**GENERAL ELECTRIC COMPANY**

# Railway Age

Vol. 65 October 4, 1918 No. 14

*More Power for the Only Road We Travel On Today—the Road to Victory.*

# Contents


## A New Design for Engine Coaling Facilities ..... Page 615

The Erie by Reconstructing Locomotive Coaling Plants at Various Points Is Effecting Economies in Track Capacity and Car Supply.

## Doings of the United States Railroad Administration ..... 617

Brotherhoods Protest Against Order to Abstain from Politics; Uniform Rules for Car Distribution; Traffic Conditions.

### EDITORIALS

Announcement ..... 611
On the Road to Victory ..... 611
Tonnage Rating Charts for Standard Locomotives ..... 611
Getting Full Value from the Conventions ..... 611
Cause of Sleepiness in the Cab ..... 611
End of the Berlin to Bagdad Dream ..... 612
Efficiency of Freight Train Operation in July ..... 612
The Salaries of Railway Divisional Officers ..... 613
The Liberty Loan and the Iron Mines of France ..... 613
Railway Men and Politics Under Government Control ..... 614
The Automatic Train Control ..... 614

### GENERAL ARTICLES

A New Design for Engine Coaling Facilities ..... 615
Doings of the United States Railroad Administration ..... 617

### GENERAL ARTICLES—Continued

The Virginian Mallet Locomotives ..... 623
I. C. C. Report on Ivanhoe Collision ..... 623
What the Future Holds in Store for the Railroads ..... 625
Tonnage Rating of Standard Locomotives; H. S. Vincent ..... 627
The Bridge and Building Convention ..... 631
Orders of Regional Directors ..... 632
Unification of Terminal Facilities in the West ..... 633
Railroads Well Started on Liberty Bond Campaign ..... 635
A Bibliography on Winter Railroading ..... 636
Distribution of Overseas Traffic ..... 637
Removing Mud from Locomotive Feed Water ..... 638
Increased Traffic Shown by Report ..... 639
Train Accidents in July ..... 640

### GENERAL NEWS SECTION ..... 641

Alphabetical Index to Advertisements, page 5. Directory of Advertisers, page 6.



Published every Friday and daily eight times in June by the

Simmons-Boardman Publishing Company, Woolworth Building, New York

EDWARD A. SIMMONS, *Pres.* L. B. SHERMAN, *Vice-Pres.* HENRY LEE, *Vice-Pres. & Treas.* M. H. WIUM, *Secretary.*

CHICAGO: Transportation Building. CLEVELAND: Citizens Building. WASHINGTON: Home Life Building.



## Editorial Staff

SAMUEL O. DUNN, Editor.
ROY V. WRIGHT, Managing Editor.

W. E. HOOPER, E. T. HOWSON, B. B. ADAMS, H. F. LANE, R. E. THAYER, C. B. PECK, W. S. LACHER, J. G. LITTLE, A. F. STUEBING, C. W. FOSS, K. E. KELLENBERGER, F. W. KRAEGER, G. L. LACHER, B. W. MEISEL



Entered at the Post Office at New York, N. Y., as mail matter of the second class.

Subscriptions, including 52 regular weekly issues and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free: United States and Mexico, $5.00; Canada, $6.00; Foreign Countries (excepting daily editions), $8.00; single copies, 15 cents each.

WE GUARANTEE, that of this issue 7,600 copies were printed; that of these 7,600 copies 7,006 were mailed to regular paid subscribers, 68 were provided for counter and news company sales, 290 were mailed to advertisers, 133 were mailed to employees and correspondents, and 103 were provided for new subscriptions, samples, copies lost in the mail and office use; that the total copies printed this year to date were 353,792, an average of 8,844 copies a week.

*The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.)*

# EDITORIAL

Railway Age

## Announcement

In the interests of the conservation of fuel, transportation and materials, the War Industries Board has limited the available paper supply. It has asked us to discontinue subscriptions upon expiration unless they are renewed and paid for; to cut down the supply of copies for the office and advertisers, and to eliminate every source of needless waste. This order becomes effective at once.

We gladly comply with the full instructions from the War Industries Board with the assurance that our subscribers and advertisers will give us every co-operation. We urge each subscriber particularly to watch the expiration date of his subscription since it will be impossible to continue the subscription after expiration, or furnish back copies in case the subscription lapses.

**On the Road to Victory**

The best advertising for the Fourth Liberty Loan is beyond all doubt the record of happenings in the past two weeks. In ten days alone no less than 100,000 prisoners and nearly 800 guns were taken, Turkey lost Palestine and will soon lose Syria, the German himself suffered most severe blows in France, and Bulgaria has finally absolutely cracked under the strain in Macedonia and is already out of the war. But while we are enthusiastically piling on dollar after dollar in Liberty Bonds, we must still bear in mind that we are lending to the end that the good work may go on. The war is as yet by no means over. Berlin is still 478 miles from the Allied lines in France, Metz has not fallen, only the Allied aviators have seen the Rhine. Optimism and enthusiasm are rightly the order of the day, but the time is by no means ripe for over-optimism. The German has banked on Allied over-optimism before and has done his worst with subtle peace moves and stories of his own broken morale. We must not give him the chance again. We must keep on piling up the dollars to our utmost, keep on doing our daily tasks with 100 per cent efficiency; and Foch and the boys over there will do the rest by landing blow after blow until the final and only possible conclusion—the Hun's unconditional surrender.

**Tonnage Rating Charts for Standard Locomotives**

Up to September 21, 127 locomotives, built to the standard designs of the Railroad Administration, had been delivered to 10 different roads. Some difficulty may be experienced at the beginning in loading these locomotives properly because of their being built to entirely new designs. The *Railway Age* has therefore arranged to publish tonnage rating charts of the standard locomotives as they are built. The first three of these charts, namely, for the light and heavy Mikados and for the Eight-wheel switchers, are published elsewhere in this issue. These charts show the drawbar pull and the number of tons it would be possible to haul over various grades at different speeds. The calculations are based on a resistance of four pounds per ton, and in the article accompanying the charts the method is explained for determining the tonnage of trains over the different grades and curvature of track. The methods to be followed when other than a resistance of four pounds per ton is to be used are also outlined. These charts should be of value to all operating officers on the roads on which the standard locomotives are used.

**Getting Full Value from the Conventions**

Two important railroad conventions were held during the month of September. They were dominated by a win-the-war spirit and received hearty and active co-operation from the Railroad Administration. They were both characterized by record-breaking attendance and by reports and addresses that were full of practical suggestions and inspiration. Are the railroads getting all that they should from these conventions? The officers who attended and took part in the meetings were largely from the firing line and final authority as to the policies of their departments is vested higher up. They are, therefore, unable to put into execution some of the more important plans which were brought to their attention without first receiving authority from their superiors. In many cases, they may be too modest or may not know just how to insist upon a fair trial of such measures as they believe to be best suited to their conditions. On the other hand, the higher officers may not fully recognize the importance of getting an expression from these men and of encouraging them to follow up the suggestions that they received at the conventions. It will be a great pity if full use is not made of the potential power which can be so easily developed. Doubtless, all of these men went to the meetings with instructions to get the very most out of them. Have they been asked to make written or verbal reports as to their recommendations and are these being followed up promptly while the inspiration from the conventions is still at a white heat? If not, it is not yet too late if those at the heads of the respective departments promptly adopt follow-up measures.

**Cause of Sleepiness in the Cab**

An engineman, 55 years old, who trusts himself to run a fast train over a busy railroad at four o'clock in the morning, when he has been awake since five o'clock the preceding morning, lacks either intelligence or conscience. This reflection must occur to thoughtful railroad officers who read the Interstate Commerce Commission's report on the Ivanhoe collision of June 22, noticed in another column; for the significant clause in that report is the following, printed in small type, from Engineman Sargent's statement: "Had been up since 5 a. m., June 21, deadheading from my home in Jackson on Train No. 41, and had had little or no sleep during the day. Had had a couple of heavy meals before going out . . . [at 10:55 p. m.]" Other phases of this case are discussed elsewhere; but to superintendents and train-

masters this will be recognized as the "nub" of the statement of the cause. The training of men's intelligence is difficult enough under any circumstances, and education of the conscience often seems entirely out of the question. Moreover, the trainmaster who has taught men to stay in bed (when they ought to be there) is still liable to be thwarted by runners who will mount their engines when worried about domestic affairs or finances and will lack the courage to acknowledge their condition. Still, it is well to at least set forth causes of collisions truly. That the monitorship of the fireman is of indifferent value as an aid to the engineman has already been commented on in these columns. On this point the government report of the Ivanhoe wreck gives us no further light. The engineman's statement adds to this a touch of farce, though we are dealing with a tragedy, by forcing the reflection that this engineman was working under the new dispensation, proclaimed by Mr. Adamson and President Wilson, that society demands the eight-hour workday. How is society going to regulate the 16-hour rest-day?

## End of the Berlin to Bagdad Dream

THE SURRENDER OF BULGARIA—unconditionally—is of special interest to railway students. Bulgaria was the keystone of Mittel Europa and through its center, through territory which will soon be occupied by the armies of General Franchet d'Esperey, passed the thread that held the central empires together, the Berlin to Bagdad railway. For a while Germany may be able to keep in touch with its Turkish ally through Rumania and Russia, but the fall of Turkey and the occupation of Constantinople are now only a matter of weeks or days. In fact, the first steps looking to the surrender—unconditionally—of the Turk may already have been taken before this will have appeared in print.

But in addition to that, railway men are reading with interest that by the terms to which Bulgaria has submitted, all the Bulgarian's means of transportation must pass to the allies—his railroads, his boats and his control of navigation on the Danube—and may be used to further operations against Germany and Austria on the remainder of the Macedonian front and against the Turk to the East. The railway lines through Bulgaria are thus put to an entirely different use from that for which they have been used for the past three years. This development is fully as important as it looks on paper or on the map, for these lines are the direct lines to Constantinople. The railways which the German may be able to use for a time through Rumania are less direct—they wend their way through the mountainous Carpathians and they reach, not that small part still left of Turkey in Europe, but the Danube at Galatz and the Black Sea at Constanza. The Danube, the boundary between Rumania and Bulgaria, is the important freight route to the East, but the surrender of Bulgarian control over the navigation of that great river and the probability that Rumania will soon revolt from German domination means that the Danube, like the railways, will soon be serving the allies—not aiding in the fight against them.

This is another important case in which the railways come to the fore as an important element in warfare, but that, in this instance, is not so important as the fact that at last the Berlin to Bagdad dream is ended. The evil effect on German morale will be as far-reaching as the opposite effect on the morale of the allies. The Berlin to Bagdad project was one of the big factors in the Pan-Germanic plan. But now the world is guaranteed that henceforth the Bagdad railway will not be tied by a string to Berlin, but that the exceedingly rich territory it traverses will be developed in a humane and proper manner, with commercial and educational, and not with militaristic ends in view.

## Efficiency of Freight Train Operation in July

STATISTICS REGARDING the results of freight train operation in the month of July should be gratifying to the Railroad Administration, to railway officers and employees and to the public. There was a decline in the freight traffic handled in both May and June, as compared with the same months of 1917, with the result that the total traffic handled in the first six months of this year was less than in the first six months of 1917. It could not be determined whether this was due to a falling-off in the amount of available traffic or to a decline in the efficiency of operation. The July statistics seem to throw light on this question, and to indicate that it must have been due to a decline in the total traffic offered. At any rate, they show that in that month there was a marked increase both in the amount of freight traffic moved and in the efficiency with which it was handled.

The statistics for July are published in detail elsewhere in this issue. The increase over July, 1917, in the amount of revenue freight traffic handled was 5.6 per cent, and yet the number of miles which locomotives, cars and trains traveled in order to move it was reduced. This reduction of train mileage, car mileage and locomotive mileage was due to the fact that there was an increase from 684 to 723, or of 5.7 per cent, in the average number of tons per train, and of 27.3 to 30.1, or 10.3 per cent, in the number of tons per loaded car. The average number of miles traveled per day by each freight locomotive and each car declined, but the increases in the loads per car and per train were so great that the average amount of traffic handled by each locomotive and each car was increased.

One important feature of the results which should not be overlooked is that the increase in the total traffic handled has been entirely due to an increase in the amount of essential traffic handled, such as coal and foodstuffs. In fact, the railways undoubtedly are handling less non-essential business than they were a year ago, which means that they are handling a very largely increased volume of the kinds of business whose movement is essential to carrying on the war.

The extent of the augmentation of the movement of essential traffic is illustrated by the statistics regarding the movement of coal. A statement issued by Director General McAdoo shows that up to and including the week ending September 21 the number of cars loaded with coal in the year 1918 exceeded the number which had been loaded up to and including the corresponding week of 1917 by 607,070 cars, or approximately 33,000,000 tons. It is also well known that the railways within recent weeks have been moving the grain crops so rapidly that practically all the terminal elevators have been filled and it has been necessary to place embargoes on the shipment of grain from the farms. As would naturally be expected, the largest increases in business handled are shown by the railways in the territories where there is the greatest activity in the production and manufacture of strictly essential commodities. The increase in revenue ton-miles in New England, and also in the South, was 15.3 per cent, while in the Allegheny region it was 8.1 per cent and in the Central Eastern district 7.6 per cent.

Apparently, the total amount of freight traffic moved in July was greater than in any previous month in the history of American railways. The number of both revenue and non-revenue tons moved one mile by Class I roads under government control was 38,761,000,000. The best previous month's record ever made, apparently, was that of August, 1917, when the number of tons hauled one mile by practicaly the same roads was 37,100,000,000.

*You Have Not Given When You Buy a Bond*

## The Salaries of Railway Divisional Officers

SOME READJUSTMENTS already have been made by the Railroad Administration in the salaries of divisional officers. Still more general and radical readjustments should be made in order to establish reasonable and satisfactory relations between the salaries of these men and the wages of employees. Even before the recent large advances in wages were made by Director General McAdoo there were numerous cases in which master mechanics, roadmasters, trainmasters, road foremen of engines and even division superintendents were being paid less than employees who were working under their supervision. This was a legacy from private management. The *Railway Age* long before government control was adopted repeatedly criticised the managements of the individual lines because they did not pay their divisional officers salaries commensurate with the wages being drawn by the higher paid employees. In many instances, however, the disparity between the wages of employees and the salaries of the officers has been increased by the advances in wages which have been made under government control.

Up to two years ago there were a few master mechanics on a certain western line who were receiving $175 a month. They received a raise prior to the recent advance in wages which made their salary $200 per month. The increase in the compensation of all officers and employees receiving less than $250 a month further advanced their salaries to $217 a month. On another railway operating in the same territory the salaries of master mechanics range from $250 a month up, with a large number at this minimum figure. The present wages of mechanics afford material for interesting comparisons with these salaries of master mechanics. Car inspectors who now work 12 hours a day will in a 30-day month earn $253; if they work 11 hours a day, as thousands of them do, they will draw $227 monthly. A machinist working 10 hours for 30 days in a month will, at the present rate of wages, earn $225. This is the amount which will be drawn monthly by a majority of machinists, blacksmiths and boilermakers, as the shops are now working 70 hours a week. In other words, a large part of the mechanical employees on the roads referred to are receiving as much or more compensation than the master mechanics, who have important official duties to perform.

Illustrations of this kind might be indefinitely multiplied. On a certain road the car repair foremen receive about $175 a month and work the same hours as the men. Car repair men receive 58 cents an hour on the basis of an eight-hour day, with time and a half for overtime. Therefore, if a car repair man on this road works 10 hours a day for 30 days in the month he will earn $191.40. On the same road a division superintendent receives $225 per month salary. A night conductor, who is paid 65 cents an hour and works 12 hours a day and 30 days a month, will earn $234.

Unfortunately, these are not extreme, but merely typical cases. Among the results are, first, that it becomes increasingly difficult to persuade capable employees to accept promotion to official positions because in many cases this involves actual reduction of their compensation; and, second, that the officers find it increasingly difficult to handle the men. Human nature among railway employees is very much the same as it is in other walks of life, and it is not human for an employee to give the same respect and obedience to a superior officer who is receiving less compensation than himself that he would yield to one who was receiving a greater compensation than himself. The salaries of divisional officers of all kinds should be so readjusted that they will exceed the wages of the employees, and exceed them as much in proportion as the importance of the duties and responsibilities of the officers exceed the importance of those of the employees. Such advances in salaries would not cost much in the aggregate, and they undoubtedly would in the long run result in increases of efficiency which would greatly exceed their total cost.

## The Liberty Loan and the Iron Mines of France

IT IS FITTING that America should be carrying on her Fourth Liberty Loan Campaign while American troops are pushing forward towards Metz and the iron fields of Briey. To leave these mines in German hands would be to leave them in the hands of those who have shown themselves unfit to use them and would in effect compel the Allies to sanction one of the greatest steals in history, the seizure of the great iron fields of Lorraine in 1871. The capture of Metz is by no means imminent as yet, but while we are raising the money here which will be used directly or indirectly to effect its capture and while we are pushing our Liberty Loan Campaign and showing what 100 per cent Americanism means it will be well to bear a few facts in mind. This may help us to subscribe more willingly and in larger amounts.

Metz is the key to the iron fields of Briey and Longwy in France, held since 1914 by Germany, and to the great fields in Lorraine held by it since 1871. The former field produced 19,000,000 tons of ore in 1914. The latter produced 21,000,000 tons while all the rest of Germany produced only 7,000,000 tons of ore and 14,000,000 tons were imported. In short the Lorraine fields taken from France in 1871 produced one-half of Germany's entire ore supply. The story goes back to 1871.

After France's defeat in the unfortunate Franco-Prussian war Germany was particularly careful to seize as part of its indemnity the iron fields of Lorraine, disregarding entirely the fact that the inhabitants of Alsace and Lorraine were French in race and sentiment. But Germany left to France the iron fields of Briey and Longwy containing ores high in phosphorus, at that time not considered of much value but later proving of greatest value after the invention of the basic Bessemer process in 1878. It has rankled in Germany's heart ever since that instead of leaving France prostrate industrially it had unwittingly left her these great resources. Immediately the Hun had goose-stepped and trampled over Belgium, he turned his attention to the territory to the east of Verdun, wresting from France iron fields that had supplied France with 65 to 70 per cent of her steel production, 80 per cent of her pig iron output and 85 per cent of her iron ore supply. Only one of her car and locomotive plants was left to France. By means of this seizure and the capture of the ore resources of Belgium, Germany nearly doubled its iron ore production despite the cutting off of imports from Spain, Russia and other nations. France, by using newly developed fields in Normandy, and with the assistance of British coal and American steel, has partly overcome the tremendous handicap and has supplied her own as well as helping supply much of her Allies' demands. For one thing, she had equipped by June, 1918, no less than 20 American divisions with field guns.

Every dollar paid for Liberty Bonds is going to help France further to overcome Germany's unfair advantage. It is going to help our own troops regain those iron mines of Briey and Longwy and of Lorraine which rightfully belong to France. Their restoration will tremendously handicap Germany's military power by cutting off the larger part of its iron ore supply and handicapping almost beyond remedy its munitions production and will be a most important step in arriving at the ultimate conclusion of the war—Germany's unconditional surrender. But what is equally important, it will guarantee that these tremendous resources will be used

by a nation whose hands are clean, and not by one which has employed its industrial might in an attempt to trample under foot the rights and liberties of the rest of the world.

Bear these facts in mind when you buy your Fourth Liberty Loan Bonds and when you ask your employees or associates to subscribe. It may help you take a bond or two more than you originally planned.

## Railway Men and Politics Under Government Control

DIRECTOR GENERAL MCADOO recently issued an order prohibiting railway officers and employees from actively participating in politics while the railways are under government control. The order especially applied to such things as running for public office, serving on political committees, and so on. It subsequently was modified to allow men holding office to fill out their terms and those who have been nominated to finish their campaigns. The manifest purpose and effect were, however, practically to restrict the political action of railway officers and employees to the exercise of their right of suffrage. It causes no surprise to persons familiar with the course of events in the railway field within recent years that representatives of the large brotherhoods of railway employees have protested to Mr. McAdoo against his order upon the ground that it denies to men in railway service the full exercise of their rights as American citizens.

This raises a question which was almost certain to be raised under government operation. and which is of the greatest importance both to railway employees and to the American people. Under private operation of railways the large brotherhoods of employees were active participants in politics, both locally and on a national scale. They had legislative agents at every state capital and at Washington to promote legislation which they desired for the furtherance of the special interests of their members. They promised the support of their votes to lawmakers and other public officials who would favor the measures they wanted and publicly and vigorously opposed the election of candidates that they knew, or suspected, would not help to secure the kind of legislation and administration of the laws that they desired. While the railways were under private control the purpose and effect of these activities were merely to secure by political means advantages for the employees over the railway corporations and their security owners. The public was indirectly affected through the restrictions and increased expenses which were forced upon the railway managements, but the effects upon the public were indirect, and most people saw little or no impropriety in the political activities of the employees.

The situation is radically altered under government control. Suppose that the employees now carry on organized political propaganda to secure the passage and administration of laws in their own interests. The results of their activities will not directly affect the railway companies. Any restrictive or burdensome laws which they may secure will apply directly to the Railroad Administration, and the Railroad Administration is a government bureau which directly represents the public in the same sense that the war department, the navy department and the post office department do. There is no question that to prohibit railway employees from participating in politics as actively as citizens outside of government service do is to restrict the exercise of the ordinary privileges of citizenship. On the other hand, can the government leave to its employees the same freedom to carry on political agitation against their employer, the government itself, as it must leave to the employees of private concerns to carry on political activities to secure advantages over private employers? Obviously not. In contests between railway employees, on the one side, and railway corporations, on the other side, the government could and did act as the arbiter and was presumed to deal justly as between them. On the other hand, if men employed directly by the government itself are allowed without restrictions to participate in politics, it is easily conceivable that they might so use their political power as to force from Congress and the Railroad Administration concessions which it would be highly inimical to the public interest to have granted. There are approximately 2,000,000 voters on the payrolls of the railways and the results which might ensue if they were allowed to exercise freely all the ordinary privileges of citizenship are too serious to contemplate.

The question of the part in politics which government employees should be allowed to play is one which has come up for consideration in every country which has engaged in government operation of industry on a large scale. The government of Queensland, Australia, found it necessary to pass a law prohibiting all government employees from taking any part in politics except that of casting their votes at the regular election. There has been much discussion in England as to whether it would not be necessary completely to disfranchise the employees of the railways in case government ownership were adopted. In Prussia the employees of the railways have been prohibited from belonging to labor organizations, the effect of which has been to prevent them from acting in concert to promote their interests by political means. The more employees a government has the more necessary it is to keep them out of politics in order to protect the rights and interests of the general public.

## The Automatic Train Control

ELSEWHERE IN THIS ISSUE appears an abstract of the report of the chief of the Bureau of Safety to the Interstate Commerce Commission, regarding the accident on the Michigan Central at Ivanhoe, Ind., on June 22 last. In this report, Mr. Borland makes the following statements:

"With such a list of accidents * * * * occurring on roads where modern signaling is in use the lesson of the urgent need for some further safeguard cannot be overlooked. It is for this purpose that the automatic stop has been devised, and devices of this kind have now been sufficiently developed to warrant service trials on an extensive scale. While it is true that automatic train control devices cannot be expected to perform all their functions with 100 per cent efficiency in the early stages of their development, they cannot be perfected unless put into use on more than an experimental scale and the weak points worked out through actual operation, as has been the case with other signal devices. It is the duty of railroads to surround their passengers with every known safeguard even though some of the devices may be called upon to act very infrequently."

The *Railway Age* in the past has advocated editorially the installation of some form of automatic train control as an adjunct to the automatic block signal system on a scale large enough to determine whether such a device will actually serve the purpose for which it has been designed. This report again focuses attention upon the need of such installations; and the Railroad Administration has the authority to make installations over a sufficiently extensive territory for a proper study to be made and conclusions to be reached as to the feasibility of such devices.

The Railroad Administration should receive the earnest co-operation of all railway men in their development, and the Railway Signal Association particularly should be in a position to help materially in such a study, as the operation of any control system will naturally come under the jurisdiction of the signal engineers. There appears to exist an impression that the Railway Signal Association and signal engineers in general are opposed to any form of automatic train control, but this is not the case. The impression has probably arisen from the fact that they are called on to pass upon these devices, using American Railway Association requirements as a basis. If it is found that automatic train control is feasible and desirable, the system which comes nearest meeting both the theoretical requirements and also those of practical service conditions will doubtless be the one that will be most generally adopted.

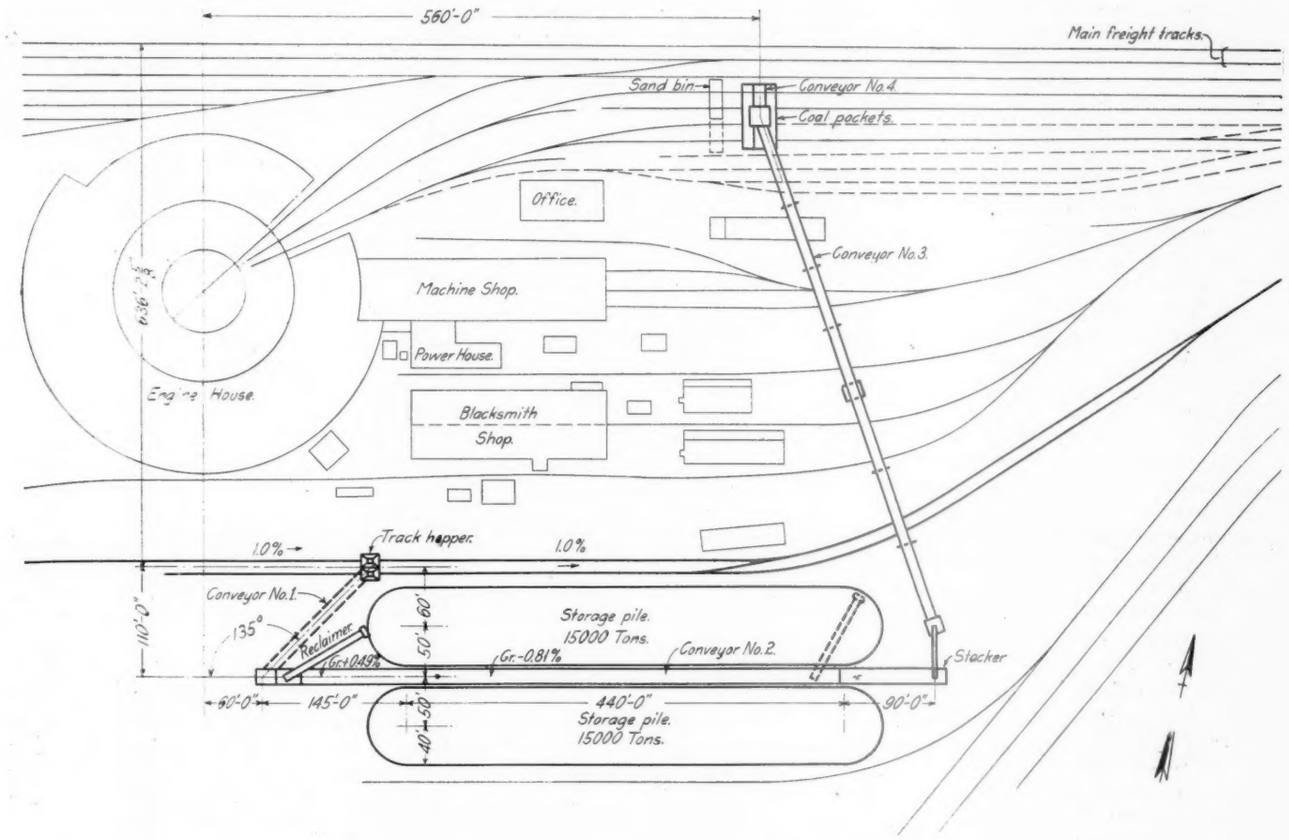
# A New Design for Engine Coaling Facilities

## Important Economies Effected in Track Capacity and Car Supply at Several Points on the Erie

THE ERIE is now engaged in an extensive program of reconstruction of engine coaling facilities at various terminals along its lines. These projects are a part of the general improvements undertaken this year to avoid the transportation difficulties experienced last winter to which inadequate facilities for coaling engines contributed to a great extent.

In accordance with the practice on most American railroads the existing facilities for coaling engines on this road were in general of the trestle type, designed to meet the daily requirements only, which at certain of the more important terminals reached 1,000 tons a day. Approximately 25 cars are necessary to carry this amount of coal. With no storage available a sufficient number of cars must be kept under load at some point in easy reach of each terminal that the daily supply may be delivered to the locomotives. This means the tying up of cars needed for other service as well as the unnecessary occupancy of trackage and results in the necessity for embargoes until the coal is moved and the tracks made available for other shipments.

The successful operation of plants of this type is therefore entirely dependent on the maintaining of an uninterrupted flow of coal from the mines to the terminals in sufficient quantity to meet the daily requirements. Even in normal times this is a difficult matter, requiring organized efforts and a special force for the purpose. Under the conditions obtaining last winter it was impossible. There were delays at the mines and transportation delays resulting from the severe weather as well as those due to the lack of sufficient men to get the coal out of the cars on arrival at the terminals. As a consequence the road was confronted with a serious fuel shortage which in extreme cases resulted in the necessity of running engines out of terminals light to meet the coal out on the line, leading to increased operating expenses and the loss of valuable time. At certain terminals efforts were made to relieve the situation by providing ground storage to supplement the trestles. This plan involved the use of a locomotive crane at the storage pile to load the coal and was unsatisfactory as cars and engines were necessary to transport the coal each day back to the engine coaling chute of only small capacity, thus affording no relief from the congestion of tracks or the shortage of cars.




**Layout of the East Buffalo Engine Terminal Showing the Location of the New Coaling Plant**

### Lack of Space Complicated the Plans for Improvement

On the Erie as on many of the older roads, the chief industrial and other growth of the cities and villages through which the lines pass has generally been in the territory immediately adjacent to the railways. This has resulted in the restriction of space available for expansion and has made

the improvement of terminals a difficult matter. This has been particularly true of engine coaling facilities involving storage in close proximity to the coaling pockets.

To meet this situation it seemed advisable to store the coal so that cars could be unloaded promptly at any season and to so place these storages that the coal could be loaded out into engines without further use of cars. With this in view a plan has recently been worked out by the International Conveyor Corporation of New York to utilize the Stuart system of coal storage to satisfy these requirements; it applies equally as well in congested locations as in the more open areas. In this plan the elements of storage and engine supply are co-ordinated without the necessity of storage tracks or the use of cars and motive power after the coal has once reached the terminal. The plan effects an important conservation of car supply and is of advantage as well to the trackage capacity in the terminals.

Of the several plants of this type which the Erie is placing on its lines the one at East Buffalo, N. Y., is the most important and is typical of what is being done at other points. In this terminal the congestion is particularly severe; still it has been possible to work out a plan for storing coal and getting it to the point of consumption without any further consideration of car movement. For this reason the East Buffalo terminal is more interesting than others where more room was available.

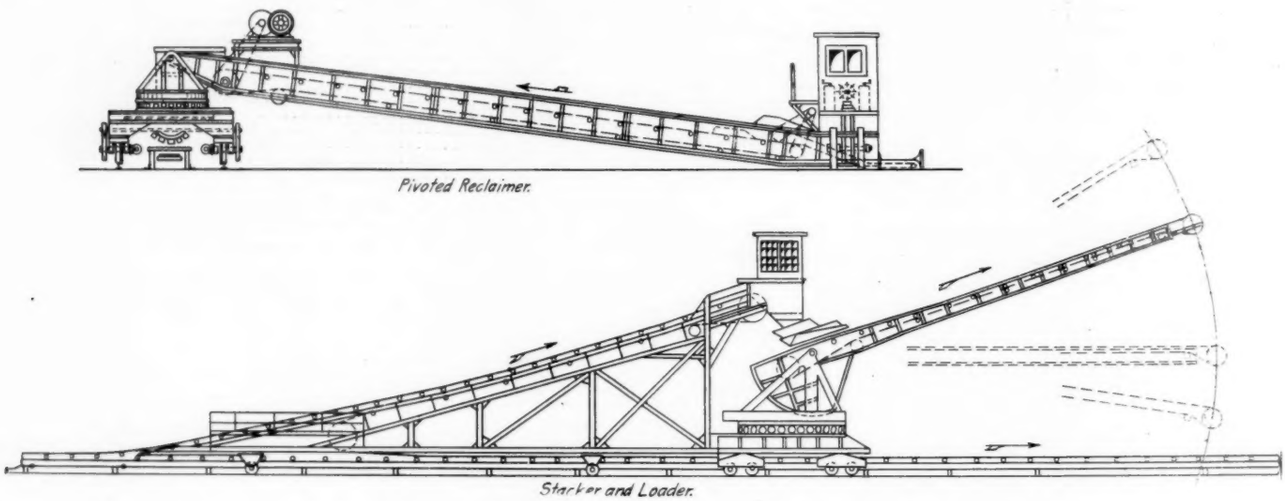
The conditions surrounding East Buffalo are typical of those at many other terminals on the older roads. No ground space is available directly at the point of consumption and the storage has been provided adjacent to the yard at a point considerably removed from the locomotive coaling pockets with facilities that enable the continuous movement of the coal to the storage or to the pockets without any handling other than the first handling at the storage point.

As may be seen on the map of the terminal, this plant consists of two tracks placed on 13 ft. centers, providing for loaded and empty cars, a track hopper, a system of conveyors, stackers and reclaimers and storage space 80 ft. by 440 ft. on both sides of the main belt, providing room for 30,000 tons of coal. The two tracks serving the plant are laid on a 1 per cent descending grade in the direction of car movement. The track capacity ahead of the hoppers is used for loads and beyond for empties, equal capacity being provided for each.

The plan provides for receiving the cars and placing them in the loaded yard to be dumped at the convenience of the operator. The cars are then dropped down by gravity and and the coal dumped into the hoppers, after which they continue down grade into the empty yard. From the hoppers the coal is picked up by a belt conveyor and discharged through a transfer chute to the main belt which extends the entire length of the storage area. From the main conveyor the coal may be delivered to the storage or directly to the engine coaling pockets.

The delivery from the main belt is accomplished by means of a stacker which is reeved through the main conveyor. This machine has a horizontal movement the entire length of the storage and is equipped with a boom conveyor that rotates through 180 deg. for delivering the coal to storage on both sides of the main belt. For delivery to the engine coaling pockets the stacker deposits the coal on a third conveyor which passes over the yard tracks.

A self-contained pivotable reclaimer is used when it is desired to furnish coal to the pockets from storage. This machine is equipped with a movable arm which carries a conveyor and scraper plow. To reclaim the coal the plow is forced into the toe of the pile, and the conveyor, which is carried to the back of the plow, destroys the stability of the repose slope of the coal, gathering it from the base of the pile and delivering it to the main belt from which it is taken by the stacker for delivery to the overhead conveyor leading to the pockets, as above described. If desired the coal can also be reclaimed for loading into cars.




**Outline Elevations of the Coal Handling Equipment**

In addition to the conservation of car supply and the virtual increase of track capacity another feature provided for in this method is the prevention of fire from spontaneous combustion. When signs of overheating occur the plant may be placed in operation and the coal taken up by the reclaiming and stacking machines and delivered to another point in the pile. It has been found that turning the coal over and exposing it to the air is the best fire preventative. With this method coals which are more highly combustible than it has been possible to utilize in the past because of the likelihood of spontaneous combustion can be stored for engine supply.

The plant is electrically operated and the stacking in and reclaiming of coal requires but two men. The capacity of the stacking in operation is from 300 tons to 400 tons per hour and the reclaiming from 250 tons to 300 tons per hour.

# Doings of the United States Railroad Administration

## Uniform Rules for Coal Car Distribution; Advances to Railroad Companies; Traffic Conditions

THE RAILROAD ADMINISTRATION and the committee representing the American Short Line Association are expected soon to reach an agreement on a form of contract by which a majority of the short lines will come under a modified form of federal control, in spite of the fact that they disagreed last week. The form of contract offered by the Railroad Administration on September 23 was declined by the short line committee, but at a further conference held with Director General McAdoo on Saturday, at the request of the committee, an agreement was reached on several points in controversy and others were left to be taken up with John Barton Payne, general counsel, and Edward Chambers, director of traffic. After the conference the short line representatives expressed the opinion that an agreement would be reached.

One of the points which has given concern to the short line officers has been the fact that railroads under federal control have been given priority as to materials and supplies over the railroad companies outside the federal system. Another point has been the question as to the extent to which they shall receive free transportation over federal lines.

### $295,000,000 Advanced to Railroad Companies

Since April 1, according to a statement issued by the Railroad Administration, the director general has advanced to railroad companies the sum of $294,845,170, exclusive of the current earnings of the roads applied directly by the individual roads to their current expenses and corporate needs. This amount went to 85 different roads or systems. The disbursements for the month of September aggregated $52,993,750.

Of the total sum disbursed to October 1 $209,347,910 was taken from the $500,000,000 revolving fund, and $85,497,260 came from the surplus earnings of various roads which were turned over to the director general by the limited number of roads whose receipts for the period exceeded their requirements.

The total amount of money turned over to the director general for the common fund from April 1, to October 1, by railroads reporting surplus earnings, was $113,000,000. To this should be added $10,419,944 received from the new American Railway Express Company, making the total receipts from railways and express companies for the period $123,419,944. Of the $113,000,000 turned over by the roads $64,507,660 went back to roads which had temporarily made the deposits with the director general, these same roads having subsequently called upon the Railroad Administration for advances considerably in excess of the deposits which they had thus made.

The only railroads which have made deposits for the common fund during this period which have not asked for the return of any portion of the funds thus deposited by them were the following:

| | |
|---|---|
| Atlantic Coast Line and Louisville & Nashville | $10,650,000 |
| Duluth, Missabe & Northern | 6,400,000 |
| Atchison, Topeka & Santa Fe | 4,600,000 |
| Duluth & Iron Range | 2,900,000 |
| Northern Pacific | 2,500,000 |
| Elgin, Joliet & Eastern | 2,500,000 |
| Bessemer & Lake Erie | 2,000,000 |
| Delaware, Lackawanna & Western | 2,000,000 |
| Central of N. J. | 1,500,000 |
| Pere Marquette | 1,500,000 |
| Pullman Car Lines | 1,000,000 |
| Fort Worth & Denver City | 900,000 |
| Spokane, Portland & Seattle | 600,000 |
| Lehigh & New England | 550,000 |
| El Paso & Southwestern | 500,000 |
| International & Great Northern | 450,000 |
| Grand Rapids & Indiana | 100,000 |
| Staten Island Rapid Transit | 100,000 |
| Texarkana & Fort Smith | 100,000 |
| Total | $40,850,000 |

The railroads to which advances were made during September were:

| | |
|---|---|
| Union Pacific | $5,000,000 |
| St. Louis-San Francisco | 4,490,000 |
| Southern Pacific | 3,700,000 |
| Pennsylvania R. R. Lines | 3,300,000 |
| Chicago & North Western | 3,300,000 |
| Baltimore & Ohio | 3,000,000 |
| Chicago, Burlington & Quincy | 2,700,000 |
| New York Central Lines | 2,620,000 |
| Erie | 2,500,000 |
| Southern | 2,000,000 |
| Norfolk & Western | 2,000,000 |
| Chicago, Rock Island & Pacific | 1,700,000 |
| New York, New Haven & Hartford | 1,500,000 |
| Delaware & Hudson | 1,500,000 |
| Illinois Central | 1,325,000 |
| Chesapeake & Ohio | 1,300,000 |
| Seaboard Air Line | 1,100,000 |
| Chicago, Milwaukee & St. Paul | 1,000,000 |
| Western Maryland | 1,430,000 |
| Chicago & Alton | 800,000 |
| Missouri Pacific | 800,000 |
| Boston & Maine | 550,000 |
| Western Pacific | 430,000 |
| Minneapolis, St. Paul & S. S. Marie | 350,000 |
| Kansas City Southern | 350,000 |
| Georgia | 309,000 |
| Terminal R. R. Assn. of St. L. | 300,000 |
| Monongahela | 300,000 |
| Denver & Rio Grande | 300,000 |
| Chicago Junction | 300,000 |
| Bangor & Aroostook | 300,000 |
| Midland Valley | 270,000 |
| Chicago & Eastern Illinois | 250,000 |
| Gulf, Mobile & Northern | 200,000 |
| Chicago, Peoria & St. Louis | 200,000 |
| Ann Arbor | 158,000 |
| Chicago, St. Paul, Minneapolis & Omaha | 150,000 |
| Portland Terminal | 150,000 |
| Belt R. R. of Chicago | 135,000 |
| St. Louis Southwestern | 130,000 |
| Rutland | 116,000 |
| B. & O. Chicago Terminal | 100,000 |
| Chicago & Western Indiana | 100,000 |
| Maine Central | 100,000 |
| Florida East Coast | 100,000 |
| Richmond, Fredericksburg & Potomac | 60,000 |
| Alabama & Vicksburg | 53,000 |
| Chicago, Terre Haute & Southeastern | 50,250 |
| Western of Alabama | 35,000 |
| Norfolk Southern | 30,000 |
| Ulster & Delaware | 20,000 |
| Louisville, Henderson & St. Louis | 17,500 |
| Tennessee Central | 15,000 |
| Total | $52,993,750 |

The amounts advanced to all railroad companies April 1 to October 1 were:

| | |
|---|---|
| New York, New Haven & Hartford | $48,464,000 |
| Pennsylvania R. R. Lines | 43,600,000 |
| New York Central Lines | 42,920,000 |
| Chicago, Milwaukee & St. Paul | 16,725,000 |
| Baltimore & Ohio | 16,500,000 |
| Illinois Central | 13,775,000 |
| Erie | 10,900,000 |
| Chicago, R. I. & P. | 7,700,000 |
| Southern Pacific Lines | 7,500,000 |
| Southern Ry. | 5,940,000 |
| Chicago, Burlington & Quincy | 5,800,000 |
| St. Louis-San Francisco Lines | 5,608,000 |
| Seaboard Air Line | 5,450,000 |
| Chesapeake & Ohio | 5,050,000 |
| Union Pacific | 5,000,000 |
| Denver & Rio Grande | 4,400,000 |
| Missouri Pacific | 3,550,000 |
| Lehigh Valley | 3,500,000 |
| Delaware & Hudson | 3,500,000 |
| Chicago & North Western | 3,300,000 |
| Wabash | 3,225,000 |
| Missouri, Kansas & Texas | 2,645,000 |
| Buffalo, Rochester & Pittsburgh | 2,600,000 |
| Norfolk & Western | 2,000,000 |
| Philadelphia & Reading | 1,400,000 |
| Chicago & Alton | 1,400,000 |
| Minneapolis & St. Louis | 1,350,000 |
| Chicago, St. P. M. & O. | 1,350,000 |
| Chicago, Indianapolis & Louisville | 1,325,000 |
| Western Maryland | 1,099,509 |
| Hudson & Manhattan | 1,000,000 |
| Kansas City Southern | 850,000 |

*And in 100 Per Cent Amounts?*

| | |
|---|---|
| Terminal R. R. Assn. of St. L. | 825,000 |
| Central of Georgia | 750,000 |
| Indiana Harbor Belt | 720,000 |
| Wheeling & Lake Erie | 700,000 |
| St. Louis Southwestern Ry. | 630,000 |
| Grand Trunk Western Lines | 621,000 |
| Florida East Coast | 600,000 |
| Norfolk Southern | 570,000 |
| Boston & Maine | 550,000 |
| Chicago Great Western | 507,660 |
| Hocking Valley | 500,000 |
| Chicago Junction | 500,000 |
| Western Maryland | 500,000 |
| Ann Arbor | 488,000 |
| Western Pacific | 430,000 |
| New York, Ontario & Western | 400,000 |
| Gulf, Mobile & Northern | 400,000 |
| Minneapolis, St. P. & S. S. M. | 350,000 |
| Georgia | 309,000 |
| Bangor & Aroostook | 300,000 |
| Central New England | 300,000 |
| Kansas City, Mexico & Orient | 300,000 |
| Belt Ry. of Chicago | 290,000 |
| Central Vermont | 285,000 |
| Chicago, Terre Haute & Southeastern | 279,451 |
| Midland Valley | 270,000 |
| Chicago & Eastern Illinois | 250,000 |
| Detroit, Toledo & Ironton | 238,775 |
| Chicago & Western Indiana | 215,000 |
| San Antonio & Aransas Pass | 200,000 |
| Chicago, Peoria & St. Louis | 200,000 |
| Atlanta, Birmingham & Atlantic Ry. | 189,000 |
| Illinois Southern | 160,000 |
| Duluth, S. S. & Atlantic | 150,000 |
| Portland Terminal | 150,000 |
| Vicksburg, Shreveport & Pacific | 136,000 |
| New York, Chicago & St. Louis | 132,275 |
| New Orleans Great Northern | 120,000 |
| Rutland | 116,000 |
| Pittsburgh & Shawmut | 110,000 |
| Maine Central | 100,000 |
| B. & O. Chicago Terminal | 100,000 |
| Old Dominion S. S. Co. | 95,000 |
| Alabama & Vicksburg | 63,000 |
| Richmond, Fredericksburg & Potomac | 60,000 |
| Washington, Brdwine. & Pt. L. | 50,000 |
| San Antonio, Uvalde & Gulf | 45,000 |
| Colorado & Southern | 41,000 |
| Franklin & Pittsylvania | 35,000 |
| Western Ry. of Alabama | 35,000 |
| Ulster & Delaware | 20,000 |
| Louisville, Henderson & St. Louis | 17,500 |
| Tennessee Central | 15,000 |
| Total | $294,845,170 |

In addition to the above sums advanced to the railroad companies directly, the director general has advanced on account of orders placed by him for locomotives and cars now under construction, the further sum of $30,660,255.

The payments shown in the above tables, the statement says, are exclusive of very large amounts which were taken from the earnings of the roads between January 1 and July 1, by the various railroad companies to meet their interest and dividend requirements and for other corporate purposes. The total funds therefore which the railroad corporations have received since January 1 from the director general and from the operations of the properties and current balances will reach approximately $1,000,000,000. The current operating expenditures and taxes of the railroad lines which the director general has also paid during the same period is estimated at between $3,000,000,000 and $3,500,000,000.

## Weekly Report of Traffic Conditions

Director General McAdoo has made public the following summary of the traffic conditions in the various regions for the week ending October 1, compiled by the Division of Traffic:

*Eastern Region*—General movement of freight traffic is heavy except New England, where the eastbound flow at present is rather light.

Steps are being taken in various directions to arrange for stocks of fuel and other traffic to avoid acute shortages during the coming winter.

Passenger travel generally heavy. It is noticeable that a large part of the through travel is composed of a class of mechanics whose higher wages seem to encourage them to take vacations and travel long distances.

Complaints of service are few to a gratifying degree, the ticket office service being now generally satisfactory. The scrip books are steadily gaining popularity.

*Allegheny Region*—Arrangements are being put into effect to move freight by coastwise lines for the relief of rail lines.

Short peach crop in New York state, but apple crop estimated to be five times as great as last year. Grape crop light.

Regular passenger travel is much lighter on account ending of vacation season, lessening shore resort travel and interference with cantonment travel because of influenza. Seashore service to be reduced October 13 to winter schedules. Three local trains eliminated on Cumberland Valley. Service in consolidated ticket offices satisfactory. Continued inspection of passenger train service resulting in many small improvements as to cleanliness, comforts, etc.

*Pocahontas Region*—Freight: C. & O. now able to take care of the merchandise via Cincinnati. Coal movement heavy and satisfactory.

Passenger: Service in consolidated ticket offices satisfactory.

*Southern Region*—Reasonable and satisfactory progress reported from the school of ticket sellers. Regular passenger travel very heavy, and there is some difficulty at occasional places in supplying equipment particularly where state fairs make additional demands. Service at ticket offices improving and no complaints received for the week.

*Northwestern Region*—Handling grain under permit system proceeding in a generally satisfactory way. Conditions as to car supply satisfactory except temporary shortage of box cars for grain loading. It is predicted that all terminal elevators in this region will be filled before the end of October.

The labor situation is better and the l. c. l. freight service accordingly improved.

Passenger train schedules being well maintained and passenger travel heavy. Consolidated ticket office conditions generally favorable except for Minneapolis, where steps have been taken to remedy the limited space.

*Central Western Region*—Handling of grain under the embargo and permit system working quite satisfactorily and not as many complaints as were expected.

Livestock movement has been very heavy, taxing to the limit the facilities of Kansas City and Omaha.

Sailing day plan established at additional cities; further saving of 270 cars per week. Reports for the week show saving of 444,721 car-miles by re-routing.

Denver consolidated ticket office opened September 23.

*Southwestern Region*—Oil loaded week ending September 25, Mid-Continent field, 7,768 cars; Louisiana and Texas, 1,881 cars.

General conditions good. Substantial increase in passenger revenues.

*War Department*—Frozen beef movement satisfactory and transportation conditions generally satisfactory.

Quartermaster corps putting forth special efforts to increase movement of supplies to reserve storage houses during October and November.

*Navy Department*—Transportation situation generally satisfactory; less than carload traffic seems to show improvement.

Coal supply better than had been stated and indications are that the department is starting winter months with better protection in regard to supplies on hand than last year.

*Food Administration*—Improvement shown in handling of fresh meat and packing house products. Difficulty in moving sheep from Utah and Idaho territory, which matter is having active attention of the Railroad Administration.

Grain situation working satisfactorily. Permit system for grain will be extended to the following Eastern markets: Buffalo, Cleveland, Toledo, Cincinnati, Detroit and Indianapolis. Situation at Seaboard grain elevators improved by better vessel supply, and grain will be kept moving to Seaboard in sufficient quantity to take care of all overseas demands.

*Fuel Administration*—Eastern Region: Coal car shortage in Ohio due to scarcity of power, which is being corrected. The regular car supply at some other points now having the attention of the Car Service Section.

Some coal congestion New England both water and all-rail, due to lack of unloading facilities.

Tidewater: Vessel supply more than ample; transportation conditions good.

Lake situation: Vessel supply interfered with by storms and ample coal at docks.

Coke: Car supply good. Shortage of labor limiting production, especially in the South.

*Fuel Administration, Oil Division*—Average number of cars oil per day from mid-continent field for September, 1,020 cars as compared with average of 944 for August.

Some complaints of slow service in the Southeastern jurisdiction now being looked after for improvement.

*U. S. Shipping Board*—Few small congestions of cars at some of the yards, all of which are being actively handled and no complaints as to lack of transportation.

*Traffic Executive of Allies*—Car supply and movement good; some delay in handling billets from Pittsburgh to Baltimore, which will be taken up for correction.

*General*—Efforts are being made in many directions to be prepared for slowing down of transportation service in winter, particularly in arranging for the control of traffic so that the flow may be regular instead of spasmodic: preparation of schedules for the movement of winter perishable traffic; increased penalty for the detention of refrigerator cars loaded with perishable freight on track; relief of intra-city rail movements, and consequent saving of terminal shifting and cars.

Progress is beginning to show in the direction of standardizing packages for the proper transportation of freight, and the first tariff covering the standard packages for Southern perishable freight will soon be issued.

Reports coming to this division from the consolidated ticket offices show that the service is now generally satisfactory, the only complaint recently being from Boston, where improvement has been made to relieve the difficulty.—H. F. L., R. R. Adm.

## Proposed Increase in Express Rates

The proposed increase in express rates, which is to be the subject of a hearing before the Interstate Commerce Commission on October 8, is to be applied both to state and interstate rates at the same time, according to a letter written by C. A. Prouty, director of public service and accounting, in reply to one written by the special war committee of the National Association of Railway and Utilities Commissioners to Director General McAdoo, which asked that the proposed increase be referred to the Interstate Commerce Commission. Mr. Prouty says that the American Railway Express Company has not applied to the director general for leave to advance its rates, but that that company is the

agent of the director general, and is responsible to him and he is responsible for it. The letter discusses in detail the reasons why it is considered necessary to increase the express rates in order to give the express company approximately $12,000,000 of additional revenue, saying that the recent increase granted by the Interstate Commerce Commission yielding the express company about $10,000,000 was only sufficient to meet the sum distributed by the express company among its employees in increased wages and that it is the opinion of the officers of the company that these wages must be further increased. He also explained that as approximately 50.25 per cent of the express company's services go to the railroads, the rates should be increased by sufficient amount to yield from $20,000,000 to $24,000,000 in gross. Mr. Prouty says he entirely agrees with the director general in that conclusion and does not believe he could with justice neglect to make substantially that advance unless he is prepared to say that the express service should be supported at the expense of the freight service. Starting out with the proposition that the additional revenue must be raised, he has secured from the express company a suggestion as to how the advance should be met and has submitted to the commission questions as to whether the method proposed is a proper and adequate one.

"So long as the government is operating these roads," he said, "there seems to be no reason why a lower level of express rates should be charged in one state than in another, nor upon state than upon interstate traffic. If there are local conditions which necessitate a departure from the general schedule, they should be called to his attention at once by the state commission and its suggestion will be investigated and accepted, if possible."

Director Prouty expressed the hope that the state commissions may do whatever they can to facilitate rather than to impede the proposal, and that they will present their views, preferably to the Interstate Commerce Commission, or in the first instance to the director general. He calls attention to the fact that when the proposed increase has been made express rates will have only been advanced about 20 per cent, while freight and passenger rates have been increased by a greater per cent and that the industries are few where both the cost of conducting the business and the price of things sold have not increased several times 20 per cent. He also requests the commissioners to bear in mind that if the rates are too high, the government obtains the greater part of the overplus and gives assurance that the rates will be at once reduced when it becomes evident that such reduction can be made.

### Freight Rate Authorities Issued

The Railroad Administration on September 25 began the practice of making available for the press a summary of the freight rate authorities issued by the Division of Traffic, giving authority to the various railroads and tariff-issuing bureaus to promulgate increases or other changes in rates without the necessity of applying to the Interstate Commerce Commission. The summaries in most cases give the reason for the change. These rate authorities are numbered and 1412 had been issued before the publicity plan was adopted. The rate at which they are issued is indicated by the fact that 34 were made public on September 25, 31 on September 26, 4 on September 27, 3 on September 28 and 8 on September 30. Some of the more important changes authorized during the past week are as follows:

No. 1,420. Authorizes readjustment of class and commodity rates from points in Eastern Trunk Line territory to points in Central territory; also to St. Paul, Minneapolis and points taking the same rates, restoring established differentials and rate relationships as suggested in Section 7 of director general's Order No. 28. Will be published on statutory notice, but as a large number of tariffs are involved it will take some time to correct them all.

No. 1,443. Authorizes publication on 30 days' notice of restriction against the use of box cars for the loading of coal moving to the eastern seaboard for trans-shipment via vessel as box cars cannot be unloaded by unloading machines now in use at the seaboard for the handling of coal to vessels; also provides for the elimination in the tariff of reference to minimum weights in box or stock cars as they are not to be used in this service.

No. 1,446. Authorizes cancellation of special rates on road-making materials between points on the Kanawha & Michigan Railway in West Virginia when consigned to the state commissioner of highways, cancellation to be made on 30 days' notice, but not to be effective until November 30 or after this season's contracts have been completed. The rate which it is proposed to cancel is $11.50 per car regardless of weight or distance hauled, and includes brick, gravel, sand and slag when consigned to the state commissioner of highways. These rates are preferential in that they provide for a lower charge for shipments consigned to the state commissioner than to others. Further, such rates are not compensatory and do not afford the carriers proper revenue for the service performed.

No. 1,480. Authorizes coastwise steamship lines under federal control to amend terminal tariffs or circulars effective on one day's notice to provide that the steamship lines will assume the marine risk on all traffic while in their possession. The amount of any loss or damage to be computed upon basis of value of the property at time and place of shipment. Most of the rates via sea and rail routes already include marine insurance, but there are a number of such rates which require this liability to be assumed by owners of the property, and the purpose is without a change in the rates themselves to make all sea and rail rates include marine insurance.

No. 1,484. Authorizes readjustment to be published on one day's notice, effective October 5, on bituminous coal in carloads, between points in Indiana. This readjustment is necessary partly because of the zoning of coal supply by the Fuel Administration; also to give the mines located on one line of railroad access to all points of consumption in the state at the same rates that apply from other mines in the same district via other lines of railroads. It has the effect of making the rates from all mines in any district the same to each point of destination via all railroads, whether the haul is over one or more roads.

The effect of the adjustment will be very generally to decrease the rates now in effect because of the application via two or more lines, and of the publication of new rates from mines to consuming points where none were carried before. There are minor advances in some of the rates to put them on a proper relationship with other rates from the same district, and the relation of rates from the several producing districts has been maintained.

### Railroad Men in Army to Be Utilized for Railroad Work

The need for skilled railroad employees has become so great that the Railroad Administration is taking steps to have returned to railroad service those who have enlisted or have been drafted into the military service, but not yet sent abroad, who are not being employed in such a way as to secure the full utilization of their special skill and experience. The purpose is not to interfere with the placing of railroad men in military railway service, but rather to make it possible to spare the men needed for that service without undue depletion of the working forces of the railroads.

While there is a shortage of skilled men for domestic railway service there is still need for large numbers of additional men for military railway service abroad. Yet it has been found that thousands of men of long experience and special skill in railway work, including many who expected to be inducted into military railway service, are in training camps in this country receiving the ordinary training of a soldier and frequently engaged in such work as peeling potatoes or digging ditches when they could contribute in much greater degree to the work of winning the war if engaged in the kind of work for which they are fitted, either here or abroad. Many more, while employed in technical, mechanical or engineering branches of the military work, have not been assigned to the particular kinds of work for which they are most fitted and the purpose is to see that skilled railroad men are given railroad work to do, either here or abroad.

With this object in view, a conference was held last week attended by representatives of the Railroad Administration, the War Department, the department of military railways, and the heads of the various railroad labor organizations. The latter brought to the meeting some lists which they had compiled at the request of the Railroad Administration, showing the names of large numbers of their members who are in the army but are not engaged in railway service. The organizations keep track of their men through their insurance organizations and some 40,000 members of the four brotherhoods of train service employees alone were shown to be in the military service. While the records of what the men are doing are incomplete, they were sufficient to show the

state of affairs and an effort will be made to secure more complete lists.

Meanwhile, the War Department has promised to cooperate in placing railroad men where they can be made most useful and the Railroad Administration has been furnishing it for some time, on blanks prepared for the purpose, with the information regarding enlisted men who should be returned to the necessary work of railroading. It is not the intention to return men from abroad; where railroad men are located there they can be transferred to the railroad regiments. Something over 50,000 men have been enlisted in the railroad regiments but the military railways need an even greater number of additional men of experience, as well as still more unskilled men as stevedores. Mr. Felton's department sent officers to the various training camps to transfer the railroad men to the railroad regiments, but it appears that a great many of the men were missed or they were enrolled in various other technical services.

The Division of Operation has established an office in charge of George M. Busby to render assistance to the various roads in securing deferred classification under the draft and the return of essential men to railroad work. The office will take up such matters with the office of the provost marshal general and other branches of the war department.

## Locomotive Deliveries

A total of 1879 new locomotives had been delivered to the railroads under federal control up to September 21, of which 127 were of the U. S. R. A. standard types, 200 were locomotives ordered for the Russian government and 114 were the U. S. A. consolidation engines built for service on military lines in France and since returned by the domestic roads for that service. The 127 standard types are distributed as follows:

| | | |
|---|---|---|
| Baltimore & Ohio | 37 | Light Mikados |
| Central of New Jersey | 10 | Heavy Mikados |
| Chesapeake & Ohio | 10 | Heavy Mikados |
| Chicago & Eastern Illinois | 15 | Light Mikados |
| Chicago, Milwaukee & St. Paul | 25 | Heavy Mikados |
| Lake Erie & Western | 7 | Light Mikados |
| Lehigh & Hudson River | 4 | Light Mikados |
| Pittsburgh & West Virginia | 3 | Light Mikados |
| Union Pacific | 6 | Light Mikados |
| Wheeling & Lake Erie | 10 | Heavy Mikados |

The weekly statement of locomotives shipped to domestic railroads shows that during the week ended September 21, 78 new locomotives were delivered to 17 different roads, including 38 of the U. S. R. A. standard types. Of these, 52 were delivered by the American Locomotive Company, 4 by the Lima Locomotive Corporation, and 22 by the Baldwin Locomotive Works. This represents a considerable increase as compared with the preceding week. In addition, the locomotive companies have been turning out a large number of locomotives for shipment to the American Expeditionary forces abroad.

## Interest on Railroad Deposits

Circular No. 59 issued by the director general announces that all banks and trust companies in which funds of the U. S. Railroad Administration or of the various federal treasurers are deposited will be notified that in future they will be required to pay interest at the following rates:

On deposits payable by check on demand: 2 per cent per annum.

On time deposits payable after thirty days from date or after 30 days' notice: 3 per cent per annum.

These rates will apply to all railroad deposits in all banks except in special cases where, because of the smallness of the account or the particularly fluctuating character of the balance, it may be considered proper not to require the payment of interest.

An investigation recently made shows, the circular says, that the rates of interest allowed by banks which pay interest on railroad deposits has ranged all the way from 2 per cent to 5 per cent per annum, and the higher rates paid have been used by some banks as an excuse for excessive rates charged to customers.

The director general expects banks designated as railroad depositaries to observe faithfully the interest laws of their respective states and not to charge rates of interest in excess of those permitted by law.

It is of great importance to the public welfare, to the financing of the war, and to the commerce of the Nation, he says, that interest rates throughout the country shall be kept at a moderate level or within a reasonable range.

## Cars Saved by Careful Loading

The beneficial effects of careful loading of cars is shown in a comparative statement of traffic handled during the month of August for the 25 principal terminals of the United States issued by the Railroad Administration.

For instance, during the week ended August 31, 338,198 cars were handled through these terminals in 1917, as compared with 337,309 cars handled during the same period of 1918, a decrease of 889 cars. For the same period in 1917 11,391,216 tons were handled through the same terminals, while in 1918 there were 11,846,867 tons, an increase of 405,651 tons.

For the week ended August 21, 1917, 240,758 cars were handled as compared with 242,361 cars in 1918, an increase of 1,603 cars. In the same period, 7,921,004 tons were handled as compared with 8,431,400 tons in 1918, an increase of 510,396 tons.

For the week ended August 14, 1917, 239,233 cars were handled as compared with 238,144 cars during the same period in 1918, a decrease of 1,089 cars. In the same period, there was an increase in tonnage handled of 515,256. In this period, 7,713,702 tons were handled as compared with 8,223,958 tons in 1918.

For the week ended August 7, 230,415 cars were handled in 1917 as compared with 238,519 cars in 1918, an increase of 8,104 cars. In this period 7,382,812 tons were handled as compared with 8,262,436 tons in 1918, an increase of 879,624 tons.

At a number of the terminals there has been a decrease in the number of cars handled during the month of August, 1918 as compared with the same month in 1917, although at the same time there was an increased tonnage handled in practically every instance.

The terminal cities included in the report are: Atlanta, Birmingham, Boston, Buffalo, Chicago, Charleston, Cleveland, Duluth, Superior, Galveston, Hampton Roads, Kansas City, Los Angeles, New York, New Orleans, Omaha, Portland Philadelphia, Pittsburgh, Seattle, St. Louis, San Francisco, Savannah, Tacoma, Minneapolis, St. Paul, Toledo.

## Execution of Contracts a Slow Process

The negotiation of the detailed compensation contracts with the individual railroad companies, is likely to take even more time than the negotiations between the committee representing the railroads and the representatives of the Railroad Administration over the standard clauses of the contract which will be used in the ordinary case. While the contract with the Chicago & North Western has been agreed upon and the directors of several other roads have approved the execution of their contracts, which are still to be approved at stockholders' meetings, there are many roads on which the details will require considerable time, particularly as it has been considered necessary to refer a great many of them to the regional directors for investigation.

## Brotherhoods Object to Order to Abstain from Politics

The general order issued by Director General McAdoo on September 1 requiring railroad officers and employees to refrain from all political activity while connected with the United States railroad service has aroused the opposition of the brotherhoods of train service employees, which in a letter addressed to the director general some time ago and in a conference with him on September 26 protested against the order as an unwarranted interference with their rights as citizens. Apparently when the order was issued, opposition to it from this source was not anticipated, because, while the order was made applicable to both officers and employees, the explanation which accompanied it referred particularly to "common report" of the political activities of railroad corporations and the "skillful and effective coercion of employees" without reference to any political activity on the part of the employees themselves. The order prohibited membership in political organizations that solicit funds for political purposes, acting as delegate to, or officer of, political conventions, solicitation of funds for political purposes, conduct of political campaigns, or becoming a candidate for political office, except such offices as membership on local school or park boards.

The order had no sooner been issued when numerous letters and telegrams were received from railroad men who were holding minor political positions or were candidates for office, and on September 14 it was modified by a provision that no objection would be raised to the completion of terms of office and that nominees for political offices might continue in railroad employment until the election. A written protest sent to Mr. McAdoo was published in circular form over the signatures of Warren S. Stone, W. G. Lee, Timothy Shea and A. B. Garretson. The letter asked for a conference with the director general, which was held at Washington on Thursday of last week. The letter also protested against an order said to have been issued by operating officials prohibiting employees from having any interest either directly or indirectly in any business in competition with commercial people along the line of road. No such order has been issued by the Railroad Administration, but such orders have been issued by individual railroads in the past.

The protest of the brotherhoods was voiced in Congress on September 25 by Representative Wood of Indiana, who declared that in many railway centers railroad men are in the majority among the voters and that they should be a proscribed class as regards participation in their own local governmental affairs is unthinkable in a republic. Regarding the order against engaging in business, he said that in many localities railway men have formed co-operative organizations for the purpose of lessening the cost of living and that many have invested their savings in coal yards, garages and many other local establishments.

Director General McAdoo explained that since railway men are now government employees it is essential that they abstain from political activities.

## New Uniform Rules for Coal Car Distribution

The Car Service Section in Circular C. S. 31, has promulgated a system of rules to govern uniformly the rating of coal mines (other than anthracite), and car distribution to such mines, which are to be made effective on all roads loading coal, other than anthracite, as soon as possible, but in any event in season to permit car distribution to be made in accordance therewith beginning October 10. At the present time the rules under which coal mines are rated and the cars distributed vary considerably on different railroads with the result that it has been almost impossible to gage accurately the car supply for coal loading throughout the country without being fully conversant with the details of the individual railroad's rules. Under the new rules, mines will be supplied each month with cars on the basis of shipping ability as demonstrated by their performance for the previous month. Each road will work on the same rules so that if the percentage rate of distribution varies it will be known whether or not a road is short of cars, because its figures will be compiled on the same basis as those of every other road.

There has always been more or less dispute as to the accuracy of the various statistics used to demonstrate the extent of car shortage or surplus and this has been particularly the case in connection with coal car supply. The United States Geological Survey publishes weekly figures compiled from the reports of nine operators, giving a figure representing the percentage of loss of full time capacity because of car shortage. These figures have frequently shown car shortages at times when railroad men have declared that a full supply was being furnished and it is said that at times the discrepancy has been caused by the fact that reports were made as of 7:00 a. m., whereas a sufficient supply of cars was furnished during the day to accommodate all of the coal available for loading. It is expected that new uniform rules will not only eliminate many sources of controversy as to the proper rating of a mine, but will also make possible more accurate statistics as to the adequacy or inadequacy of the car supply. These rules have been in the course of preparation for the past two months, during which time the Railroad Administration has obtained the views of representative transportation men, of important bituminous coal loading roads, as well as of the Fuel Administration, the National Coal Association and individual operators.

RULES FOR RATING FOR CAR DISTRIBUTION PURPOSES COAL MINES (OTHER THAN ANTHRACITE) LOADING COAL AT MINE TIPPLES.

The following rules shall govern the rating of coal mines (other than anthracite) as the basis for the distribution of empty cars to such mines during periods of car shortage:

*a.* The daily capacity of each mine (other than mines covered by paragraphs *b* and *c*) shall be determined by taking the total coal tonnage shipped by the mine during the preceding month, dividing it by the number of hours worked in producing it (see paragraph *e*) and multiplying the quotient by the number of hours in the recognized work day (not more than 10 hours) of the individual mine. The result shall be termed the "daily rating" of such mine, and shall be the basis on which cars shall be distributed to it during periods of car shortage.

*b.* The daily capacity of a mine which is served jointly by or for two or more carriers (steam, electric or water) shall be determined by taking the total tonnage shipped by the mine via all such carriers during the preceding month, dividing it by the number of hours worked in producing it (see paragraph *e*) and multiplying the quotient by the number of hours in the recognized work day (not more than 10 hours) of the individual mine. The result shall be termed the "gross daily rating" of such mine, and shall be the basis on which cars shall be distributed to it during periods of car shortage; provided, that if track or other limiting conditions further restrict its ability to ship via (note *a*).....railroad, such conditions shall be the limiting factor for the (note *a*).....railroad's daily rating of such mine.

*c.* The daily capacity of a mine delivering part of its output to a coking plant, to locomotives at the tipple, or to local trade shall be determined by taking the total coal tonnage shipped in railroad cars during the preceding month, dividing it by the number of hours worked (see paragraph *e*) and multiplying the quotient by the number of hours in the recognized work day (not more than 10 hours) of the individual mine. The result shall be termed the "daily rating" of such mine and shall be the basis on which cars shall be distributed to it during periods of car shortage.

*d.* When the fires are withdrawn from part (or all) of the ovens at an operation coking part of its output, for the purpose of shipping coal production formerly used in charging ovens, the daily rating of the mine shall be increased to include the average tonnage per day so diverted in the previous month, until the beginning of the next rating period, at which time the daily rating of the mine shall be determined in accordance with paragraph *a* or *c*, due allowance being made for such average tonnage so diverted in computing the new daily rating. A corresponding decrease of the mine's rating will be made when the ovens are again placed in blast.

When a mine that has been coking its entire output desires to ship coal and the fires are withdrawn from part (or all) of its ovens, it shall be given a daily rating for coal shipments corresponding to the average tonnage of coal formerly coked until the beginning of the next rating period, at which time the daily rating of the mines shall be determined in accordance with paragraph *a* or *c*.

*e.* In determining the number of hours worked in each day at a mine, time will be counted from the established time for beginning work (or the actual time if earlier than the established time) on the tipple until the dumping of coal finally ceases for the day, making deductions for the noon intermission when it is taken, and for the time lost by reason of being blocked with loads, waiting for additional empty cars, or other railroad disability; provided, that if a greater number of hours is worked in the mine than on the tipple the mine hours must be reported also. Time may be deducted for railroad disability only when such railroad disability actually

reduces the quantity of coal dumped that day. Time may be deducted when tipple is used for dumping coal into locomotives only when the tipple cannot be simultaneously operated for loading cars.

*f.* Daily ratings determined in accordance herewith will be revised monthly and made effective on the 10th of the month following the month's performance on which the rating is determined.

*g.* If a mine be idle for a period of one full calendar month or more, the last rating determined will be the rating when work is resumed, provided the mine conditions be substantially the same as when the mine closed.

*h.* A rating for development purposes based on current performance will be assigned to a new operation in previously undeveloped coal. A new mine will be furnished with a supply of cars sufficient to enable it to work freely in the course of development for a period not exceeding 3 months after shipments are begun; provided, that if theretofore its ability to load 150 tons per day is established, it shall then be rated. A new operation of any other character shall be entitled to a development rating for a period of one month after shipments are begun.

*i.* Each mine shall report on a prescribed form to the.....(note *b*) promptly at the close of each day:

1. The number of hours in the recognized work day;
2. The established time for beginning the day's work;
3. Actual time work was begun this day on the tipple;
4. If noon hour intermission taken, how long;
5. If time lost account blocked with loads, waiting for railroad cars, or other railroad disability, how much on each account;
6. Time work on tipple ceased for day;
7. Number of hours worked today on the tipple.....; and in the mine.....(see paragraph *e*);
8. Number of net tons of coal loaded for shipment via.....(note *a*).....railroad;
9. Total number of net tons of coal produced and shipped via each other outlet.

Joint mines shall furnish this daily report to each carrier serving them.

*j.* At the close of each month the mine manager or superintendent in charge of actual operation shall report under oath on a prescribed form to the.....(note *b*).....having jurisdiction, separately for each mine for each month, as follows:

1. Number of hours in the recognized work day;
2. Total number of net tons of coal produced;
3. Total number of net tons of coal shipped via the.....(note *a*) .....railroad;
4. Total number of net tons of coal shipped via each other outlet;
5. Total number of hours worked during the month (see paragraph *e*).

This report must be forwarded not later than the 3rd of the month following that for which the statement is furnished. Joint mines shall furnish this monthly report to each carrier serving them.

*k.* If an operator declines or persistently fails to make reports or to make accurate reports to the carrier as required herein, it will be assumed that the mine worked full hours in producing and loading into railroad cars the tonnage shipped, and the daily rating will be computed accordingly.

NOTE *a. Designate name of issuing railroad.*

NOTE *b. Designate title of proper officer of issuing railroad.*

RULES GOVERNING THE DISTRIBUTION OF CARS TO COAL MINE TIPPLES (OTHER THAN ANTHRACITE).

Whenever the available car supply in any region (or district) is such that all orders for cars can be filled, cars shall be placed at each mine in accordance with its daily order. Whenever the available car supply is such that all orders for cars can not be filled, each mine shall be given its pro rata share of cars (grouping of mines or pooling of cars not being permitted) in accordance with the following rules:

1. The daily rating, or the daily order for cars if less than the rating, shall be the basis for car distribution.

2. Each mine operator shall report to the car distributor at ..... (note 1).....p. m. daily:

*a.* Number of unconsigned loads on hand at 7 a. m.
*b.* Number of empty and partly loaded cars on hand at 7 a. m.
*c.* Additional number of empty cars received prior to 10 o'clock a. m.
*d.* Aggregate number of empty cars received during the day.
*e.* Number of cars loaded during the day.
*f.* Number of empty cars standing over at close of day.
*g.* Number of empty cars standing over at close of day which were received prior to 7 a. m.,.....cars; and prior to 10 a. m.,..... cars.
*h.* Number of partly loaded cars under tipple at close of day.
*i.* Number of unconsigned loads on hand at close of day.
*j.* Additional number of empty cars required for loading following day.
*k.* Note 2.

Copies of orders for cars for a mine that is joint with any other carrier (steam, electric, or water) shall be filed with a designated representative of each such carrier. Such combined requisitions must not exceed the gross daily rating of the mine.

3. The recognized standard car for coal car distribution is 50 tons. Others are compared thereto by tenths of a car, *i. e.*, 80,000 pounds capacity equals eight-tenths (.8) of a car; 140,000 pounds capacity, one and four-tenths (1.4) cars, etc., and charged accordingly against the mine.

4. *a.* All cars placed at a mine during each period of 24 hours ending at 10 o'clock a. m. (or when Sundays or holidays intervene, the longer period ending at 10 o'clock a. m. of the day immediately succeeding the Sunday or holiday) shall be charged against the mine on the day when such period ends; provided, that if the cars placed at 7 o'clock a. m. do not equal or exceed in number 40 per cent of the daily rating (or order if less than rating) than the cars placed subsequent to 7 o'clock a. m. will not be charged against the mine for that day unless they are loaded or partly loaded on the day placed.

*b.* Cars placed between 10 o'clock a. m. and the time the mine ceases work for the day, if loaded or partly loaded on the day placed, will be charged against the mine on that day.

*c.* All cars of other than railroad ownership (commonly called "private cars") placed for owner's loading will be considered as ordered.

5. The pro rata share of cars to which each mine is entitled, except as provided in Rule 7, shall be based on its rating (or order when less than its rating). When a mine has empty or partly loaded cars which were placed prior to 7 a. m., or unconsigned loads, standing over at the close of the day's business, such cars shall be charged against it each service day thereafter while they are detained.

If on any day a mine be furnished with cars totaling less than 100 per cent of its rating (or order if less than its rating) and for any cause whatever other than railroad responsibility fails to load the entire number, the mine shall be considered as having been furnished one hundred per cent of its requirements and its order shall be arbitrarily reduced to the number of cars furnished.

6. Private cars and such cars as are assigned to mines by the Car Service Section, United States Railroad Administration, will be designated as "assigned" cars. All other cars will be designated as "unassigned" cars.

7. If the number of assigned cars placed at a mine during any period, as provided in Rule 4, equals or exceeds the mine's pro rata share of the available car supply, it shall not be entitled to any unassigned cars. The assigned cars, together with the mine's requirements, will be eliminated, and the remainder of the available car supply prorated to the other mines, based on a revised percentage by reason of such elimination.

8. If the number of assigned cars placed at a mine during any period, as provided in Rule 4, is less than its pro rata share, based on a revised percentage, it shall be entitled to receive unassigned cars in addition thereto to make up its pro rata share.

9. If a mine receives more or less cars than it is entitled to during any period, as provided in Rule 4 (and after eliminating assigned cars as provided in Rule 7) it will be charged with a surplus or credited with a shortage accordingly and the discrepancy adjusted as promptly as practicable.

10. A record showing the distribution will be maintained in the office of each interested Superintendent, or his representative, and shall be open for inspection by one representative from each mining company in the district to which the record applies. Such record will show for that district the mine rating and percentage of cars supplied to each mine, and the totals for each railroad division, for the preceding rating period.

NOTE 1. *Hour may be named by the issuing railroad.*

NOTE 2. *Issuing railroad may ask additional necessary information pertaining to car supply.*

## Committee on Health and Medical Relief

A Committee on Health and Medical Relief has been appointed by the Railroad Administration, consisting of the following: Dr. D. Z. Dunott, chief surgeon, Western Maryland, chairman; Dr. G. W. Cale, Jr., chief surgeon, Frisco Lines; Dr. Victor G. Heiser, surgeon United States Public Health Service; Dr. T. R. Crowder, chief surgeon and sanitarian, Pullman Company, and Dr. H. M. Bracken, state health officer for Minnesota.

The committee will establish an office in Washington and will conduct a survey of, and submit recommendations in connection with, the proper protection of the health of employees and patrons of the railroads under federal control.

## Increased Car and Train Loading in Allegheny Region

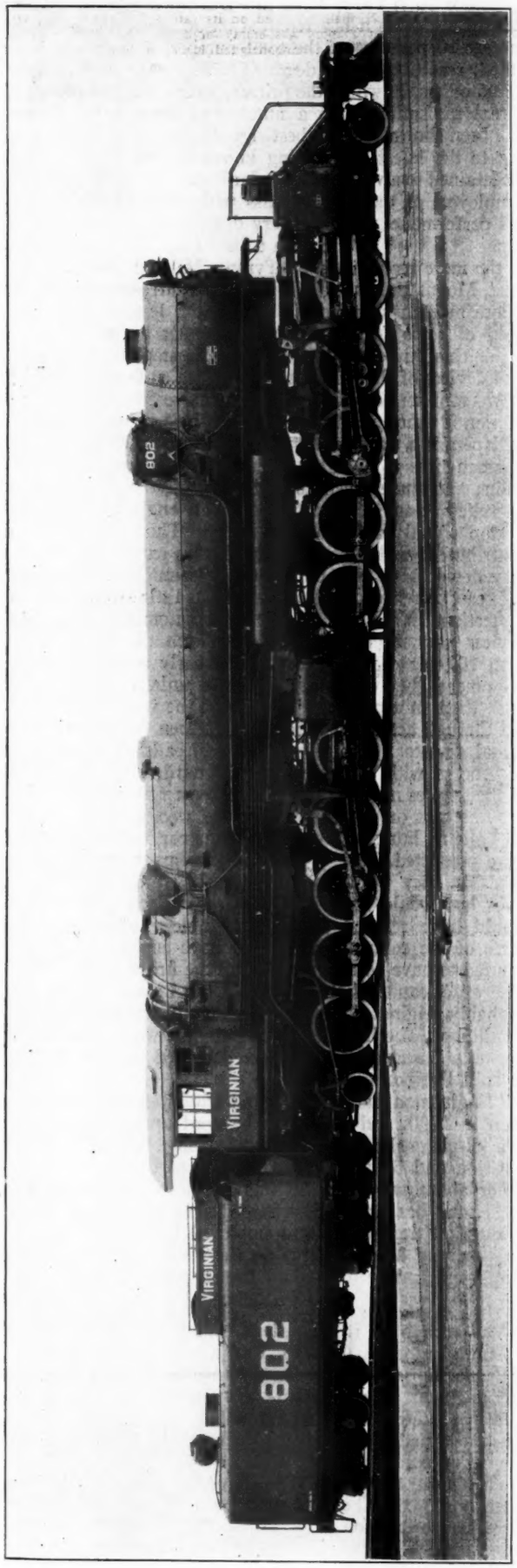
Director General McAdoo has received a report from C. H. Markham, regional director of the Allegheny region, showing that in that region tons carried per train during July, 1918, averaged 972, as compared with 902 for July, 1917, an increase of 70 tons or nearly 8 per cent. The increase in July, as compared with June this year, was 50 tons. Tons per loaded car average 36.8 for July, 1918, as compared with 34.3 for July, 1917, an increase of 2.5 tons, or about 7 per cent. The increase in July as compared with June, was 2.6 tons.

## District Managers Appointed for Procurement Section

Announcement is made of the appointment of the following district managers of the Procurement Section of the Central Advisory Purchasing Committee: J. G. Stuart, general storekeeper, Chicago, Burlington & Quincy, Chicago district, headquarters, Chicago, Ill.; W. A. Hopkins, supply agent, Missouri Pacific, St. Louis district, headquarters, St. Louis, Mo.; Oscar V. Daniels, Pittsburgh district, headquarters, Pittsburgh, Pa.; W. F. Jones, general storekeeper, New York Central, Eastern district, headquarters, West Albany, N. Y.

## Mechanical Department Headquarters

The officers of the mechanical department of the Division of Operation have been removed from the Interstate Commerce building to larger quarters on the northwest corner of Seventeenth street and Pennsylvania avenue.




The Heaviest Locomotive in Existence—Built for the Virginian by the American Locomotive Company

## The Virginian Mallet Locomotives

THE AMERICAN LOCOMOTIVE COMPANY has recently delivered to the Virginian Railway 10 Mallet locomotives which are the heaviest locomotives ever built and, when working simple, the most powerful. These engines weigh 684,000 lb., of which 617,000 lb. is carried on the drivers. The total weight of engine and tender is 898,300 lb. They have a tractive power of 147,200 lb. working compound, and 176,600 lb. working simple. The weight including the tender is greater than that of the Triplex locomotives and the tractive effort, working simple, is some 10,000 lb. greater. These engines will operate over a grade of 2.07 per cent and have been built to increase the traffic density over an important single track section on the Virginian Railway. They are to be operated in pairs in pusher service with a 2-8-8-2 Mallet engine at the head of the train, the three locomotives being able to handle a train of 5,850 tons. A more complete description of these locomotives will be published in a later issue.

## I. C. C. Report on Ivanhoe Collision

THE REPORT of W. P. Borland, chief of the Bureau of Safety of the Interstate Commerce Commission, covering the investigation of the rear collision of westbound trains which occurred on the Michigan Central at Ivanhoe, Ind., on June 22, 1918, at 3:55 a. m., has been made public. This collision, reported in the *Railway Age*, June 28, page 1570, resulted in the death of 67 passengers and 1 employee, and the injury of 127 passengers. The investigation was made in conjunction with the Indiana Public Service Commission. The line is double track and this division is completely equipped with automatic block signals, normal clear. The line is straight for about 3,480 ft. approaching the point of accident, which was 990 ft. east of the westbound home signal at Ivanhoe interlocking. The grade is level, or very slightly descending for about half a mile.

The trains involved were westbound extra 7826, with a part of the Hagenbeck-Wallace circus, and westbound extra 8485, a train of empty passenger cars, No. 8485 running into No. 7826. The circus train consisted of 7 stock cars, 14 flat cars, 4 sleeping cars and a caboose, all except the caboose being the property of the circus company. The killed were nearly all in the sleeping cars, which took fire at once.

The testimony, as summarized in the report, shows the facts substantially as already reported. The signal system was working properly and the marker lights were burning properly on the circus train. Extra trains are permitted to run ahead of superior trains without orders until instructed by signal or message to take siding. On double track extra trains do not carry classification signals, nor is it necessary for them to clear the time of regular trains; they are governed by the automatic signals. If delayed the conductor must communicate with the despatcher, and in the absence of instructions must protect his train and clear the main track as soon as possible.

### Statement of Engineman Sargent

At the time of the investigation engineman Sargent of Extra 8485, being under arrest, and on advice of his counsel, refused to testify, but in his report to the officers of the railroad company he made the following statement: "I was called shortly after 8 p. m. June 21, for duty at 10:15 p. m., on deadhead equipment west, engine 8485, and left Kalamazoo at 10:55 p. m. Had been up since 5 a. m. June 21 deadheading from my home in Jackson, on train No. 41, and had had little or no sleep during the day. Before going out

I had eaten a couple of heavy meals, realizing that I would not get anything more to eat until some time the next morning. Leaving Kalamazoo, I followed a freight train to the M. C. yards and stopped at a signal near Center St. I got a proceed signal from someone on the ground, pulled up to Michigan City, and stopped at the stand pipe to take water. While following this freight train we stopped first between Dowagiac and Pokagon, because of the signal in the danger position. I stopped again at Pokagon and Niles for the same reason, as this freight train was ahead. Leaving Michigan City I had a clear track to East Gary and there caught the block of the train ahead, and reduced speed, but did not have to stop as the block cleared before I reached it. I reduced speed going through Gary, to comply with the rules, and saw no more signals at caution or danger until approaching the curve east of Ivanhoe, where I found the second signal east of where the wreck occurred at caution. I was going about 25 miles an hour at this point, but did not reduce speed as I expected that the next signal would probably clear before I got to it, or that I would see it, if at danger, in time to stop. The wind was blowing very hard into the cab on my side and I closed the window, which made the inside of the cab more comfortable. Before reaching the next signal I dozed, because of the heat of the cab, and missed it. Not realizing what had happened to me until within 75 to 90 ft., I awoke suddenly and saw the tail lights showing red on a train directly ahead of me. Not realizing that the rear end of this train was so close, I started to make a service application, but before completing it I placed the brake valve handle into the emergency position. We struck almost instantly after making the brake application. * * * I looked to see where the fireman was, and saw he was running towards the gangway. * * * I have been in the service of the Michigan Central for approximately 28 or 29 years, the last 16 of which I have been continuously employed as an engineman. I am in perfect physical condition as well as mental condition and have had no illness within 25 or 30 years requiring the service of a doctor. The accident was due solely to the fact that I accidentally fell asleep and I had no intent to injure any person, nor was same done with malice, but solely through an accident, as aforesaid."

Fireman Klauss of Extra 8485 was also under arrest and refused to testify or make a statement.

### Findings of the Inspector

In its conclusion the report says: "This accident was caused by engineman Sargent being asleep, and, from this cause, failing to observe the stop indication of automatic signal 2,581 and the warnings of the flagman of the circus train, and to be governed by them. In the absence of any statement from Fireman Klauss, or of any testimony as to his actions immediately preceding the accident, it is impossible to form any conclusion as to whether or not he contributed in any way to the cause of the accident. The interval between the time when the circus train stopped and the time of the collision was very short. It appears from the investigation that the flagman started back immediately and made a diligent effort to get back far enough to properly protect his train.

"This collision is another example of that class of accidents which a modern system of signaling is powerless to prevent. It has been repeatedly pointed out in reports of other accidents investigated by this Bureau that the only known way to guard against such accidents is the use of some form of automatic device which will assume control of the train whenever the engineman fails to obey the stop indication of a signal. * * * Everything was favorable for the second train to stop except the one failure that no signal system can guard against, namely, the failure of the man.

"Since July, 1911, when this Bureau began the investigation of accidents it has reported on 50 accidents, or approximately 10 per cent of the total number of accidents investigated, resulting in the death of 270 persons and injuries to 1,405 others, in which the primary cause was the disregard of signal indications. In a number of these investigations it has been shown that the best signal systems, installed according to the latest engineering knowledge on the subject and maintained to a very high standard, will not prevent accidents. Employees of the highest class with long records for faithful performance of their every duty have failed at a critical time. * * * With such a list of accidents, to refer only to the more recent ones, as Tyrone, Milford, Amherst, Bradford, Mount Union and North Vernon, all occurring on roads where modern signaling is in use, the lesson of the urgent need of some further safeguard cannot be overlooked. It is for this purpose that the automatic stop has been devised and devices of this kind have now been sufficiently developed to warrant service trials on an extensive scale. In this connection it is noted that ordinary locations of automatic signals will permit a much closer spacing of trains than will give a flagman time to get back a sufficient distance to protect his train; and under such conditions, protection by flag cannot be relied upon if for any reason an engineman disregards a stop signal indication. * * * The conditions which contributed to this accident frequently exist, and * * * they demonstrate that under such circumstances the flagging rule can be relied upon to furnish but little if any additional protection. While it is true that automatic train control devices cannot be expected to perform all their functions with 100 per cent efficiency in the early stages of their development, they cannot be perfected unless put into use on more than an experimental scale and the weak points worked out through actual operation, as has been the case with other signal devices. It is the duty of railroads to surround their passengers with every known safeguard, even though some of the devices may be called upon to act very infrequently.

"The cars on the circus train (of wood), were lighted by oil lanterns hung in the center of the car and no other lights were permitted. * * * Had the cars been of steel construction they would not have burned and the number of lives lost would have been far less. Even reinforced sills would have resisted to a considerable extent the crushing force of the collision and would have enabled many of the injured to have been removed after the fire started. * * * The exact cause of the fire could not be ascertained, but it probably originated from the lanterns in the cars and the oil headlight. The head end of the engine was not broken open nor was the ashpan or firebox damaged in such a way as to spill live coals.

"Engineman Sargent was first employed as a switch fireman in 1890, and had a good record up to 1910, when he was discharged for running past a block signal in the stop position and colliding with the rear of the preceding train. After about two years he was reinstated on December 30, 1911, and has had a clear record since that time. Fireman Klauss, of train 8485, was employed in October, 1917, and was making his tenth trip on the main line. None of the employees had been on duty for excessive periods."

---

**The school for ticket sellers,** established by the Railroad Administration in Chicago, was opened on October 1. It is in the Edison building, and instruction is given to fit pupils for positions as accountants and attendants at information bureaus as well as for ticket selling proper. The school is designed particularly for the instruction of women, and the course extends through eight weeks. During this time students will be paid at the rate of $35 a month. The manager is W. H. Abel, assistant general passenger agent of the Chicago & Alton.

# What the Future Holds in Store for the Railroads

## Two Views on Effect of Federal Control on Securities and Fate of Carriers After War

IN ADDRESSES before the American Bankers' Association at Chicago on September 24, Samuel Untermyer, representative of railroad security holders in their contract negotiations with the government, and Francis H. Sisson, vice-president of the Guaranty Trust Company, New York, presented divergent views on the effect of federal control on railroad securities and the probable final solution of the transportation problem in this country. Brief abstracts of portions of their speeches were published in the *Railway Age* of September 27.

With reference to the future of securities, Mr. Untermyer took a rather pessimistic view and expressed the opinion that, under the present form of contract, dividends would probably be materially diminished or entirely discontinued, and predicted that if the railroads are returned to their owners at the conclusion of the war, they will be burdened with onerous charges for additions and betterments authorized by the government, and bereft of much business which it took years of private operation to create. He believed that the only remaining alternative for security holders was government ownership at a fair price. Mr. Sisson, on the other hand, took a more optimistic view of the future of securities and went on record as unalterably opposed to government ownership. He believed that a more satisfactory solution of the railway problem would be one which would retain all of the advantages of co-ordination and also of individual ownership.

Mr. Untermyer's remarks were in part as follows:

### Railroad Credit Doomed Under Private Ownership

The probable operating and financial conditions of the roads at the end of federal control are, of course, the chief concerns of those interested in them, vastly more important to them than the amount of compensation payable during the uncertain tenure of federal control * * * That the roads that are continued in operation will be in at least as good physical condition as when taken over, to the extent to which they are not dismembered, except as to the business that is diverted from them, may, I think, be reasonably assumed. The danger is rather that many of them will be in better condition and with more equipment, better roadbed and heavier rails than they can afford and better than their normal requirements demand.

These improved conditions will be largely represented by charges against their properties that they may be unable to meet. Added to these burdens will be the expenditures that may be made for their account for additions, extensions, equipment, etc., for war and other purposes for which it may eventually be determined that they are not liable. But meantime the obligations have been fastened upon them whilst it may take years of litigation for them judicially to establish the negative proposition that they are not liable for them, the burden of establishing which is placed upon them. If they fail successfully to carry that burden they must take and pay for these additions and extensions on the basis of their cost to the government at inflated prices.

It would seem as though in most cases this would destroy their credit and render them unable to finance these onerous requirements. If the systems of transportation are unified and co-ordinated, parallel and competing lines discontinued or diverted into other channels, new connections and other changes made that will unquestionably result in greater efficiency and economy in the operation of all the systems taken as an entirety, some roads will benefit whilst others will be virtually destroyed. Even of those that are benefited the burdens may be too great to carry. I can see little hope for most of them except through federal ownership on almost any terms that the government may impose. * * *

### Basis of Compensation to Owners

How are the security holders of the railroads likely to fare under government ownership in the light of this contract? * * * Here again the entire field of conjecture is open but there are signposts along the road. * * * Not only will the government be able to return the properties bereft of their chief element of value and be furnished the basis for valuing them for the purpose of acquisition on that quasi-confiscatory basis, but far more serious in its results may be the valuation placed upon the tangible assets in the light of these provisions.

It may well be doubted that the courts would hold that as to properties the operations of which have been abandoned, the rails, yards, shops, stations, roundhouses, elevators, warehouses, etc., would be valued at their scrap value, and yet this is not beyond the range of possibility having regard to the fact that the carriers that have signed the contract have thereby agreed to such abandonment and have given express permission for their return in that condition. It was largely in order to avoid that construction that a persistent effort was made to safeguard against such a contingency, the result of which is embodied in the document but in a somewhat equivocal form that is far from satisfactory.

Assuming that the peril from this source has been overcome and that the properties will be justly valued, the next question that occurs to the present and future investor is as to the basis and method of compensation that will in that event be adopted. Here we have something of a premonition as to the attitude of the Interstate Commerce Commission if, as is probable, the valuation is placed under its jurisdiction. * * * Certain principles have been tentatively announced by the commission which, if adhered to and upheld by the courts, will seriously impair property values as at present understood, but I do not believe that they will be sustained. * * * Suffice it to say that if the views of the commission as to values and elements of value as there announced are adopted in the acquisition of the roads the recovery may be limited mainly to replacement cost, which does not begin to represent the present cost of acquisition.

### Proposed Plan for Purchase of Roads

Having ascertained the basis of compensation, in what way is the government likely to offer to pay for the properties? To pay outright in cash would seem impracticable in view of our financial condition at the end of the war, nor would it be necessary or profitable to either party. The most logical and probable method would seem to be to guarantee interest and dividends on outstanding securities to an amount that would yield a reasonable rate of return on the values of the properties, or for the government to issue in exchange its own long term securities at rates of interest that would give to them a par value having regard to their greater market and intrinsic value as government obligations.

If, for instance, a high class four per cent railroad bond normally sells at 90, a long term government bond or guarantee at 2½ per cent should under peace conditions have an equal value. If a stock paying 6 per cent and earning an average of twice that amount over a long series of years

has commanded an average price of par, shareholders would doubtless be willing to accept a 4 per cent or even a 3 per cent government obligation as an equivalent in market value. There should be no difficulty in carrying out such a plan as to the prosperous road. It would be fair to the security holders and highly profitable to the government. If a road has been paying, say, 4 per cent on $50,000,000 bonds and earning and paying 6 per cent on an equal amount of stock, or $5,000,000 in all, and the government would guarantee 2½ per cent on the bonds and 4 per cent on the stock, the annual charge to the government would be $3,500,000, leaving it an annual profit of $1,500,000 or equal to a profit of 30 per cent, and the securities would have at least as great a market value as those of the company paying the higher rates. I am assuming that the value of the properties is fairly represented by the outstanding securities inasmuch as rates are supposed to be based upon a fair return on capital investment.

The difficulties will be encountered when it comes to fixing values on properties representing capital investment that are out of proportion to their net operating revenues. Will their compensation be regulated by the investment or the returns? Probably by a combination of both elements. Whatever the result, they could also be compensated by government guarantees equivalent to a return on whatever is found to be the selling or condemnation value.

In any event even if the government pays generously for the properties its net revenues will be greatly augmented by reason of the greater value of the low interest bearing securities it may issue by way of payment or guarantee on acquiring the properties. If ten billion dollars par value of securities of privately owned roads now yielding an average return of $400,000,000 per year have a market value of, say, five billion dollars, would not six billions of these securities with a government guarantee of 3½ per cent have an equal or greater aggregate value? Assuming a continuation of the same net operating revenues this would leave to the government a net profit of $190,000,000 per year.

There is no occasion for driving an oppressive bargain with the security holders. Assuming that a fair price is paid, sufficient to maintain at least the present market values of the securities, the savings in interest and dividends by reason of the lower rate required to command the same market price would alone constitute a sinking fund sufficient to pay for the roads in from 30 to 40 years without a dollar of actual cost or outlay to the government, and this without taking into account the vast economies from operations made possible through unification of the systems. * * *

Government ownership at a fair price will be far more advantageous for the government and infinitely better and vastly more just to the security holders than federal control under the conditions of this contract. * * *

Mr. Sisson said in part:

### Proposed Solution of Railroad Problem

A regional railroad system based on natural traffic divisions would meet the tests of economic operation and of economic utilization of railway capital. In the development of such a system we should be able to retain all the advantages that come from individual ownership and operation, to retain the advantages that would come from co-ordination of railway facilities under government ownership and operation, and at the same time avoid the evils that would undoubtedly develop from either government ownership, or a continuation of the old competitive system. It would lay a sound basis for the development of a wholesome territorial competition in industry, supervised by regional commissions acting as regulating bodies under one central commission.

It should be planned to have the ownership of these companies under federal incorporation rest in the hands of individual holders who at the time of transfer would represent the owners of the existing railway system. In taking over existing securities of the railways, and in consolidating them with the regional system, a broad viewpoint of value based on fair, average market prices should be taken. In any plan of reconstructing our railways it must be assumed that the rights and equities of the present holder of railway securities will be recognized. In effecting the exchange of securities a government commission should take cognizance of these claims and make proper adjustments. Some plan providing for guaranteed dividends and a profit-sharing arrangement with the government above the guarantee, together with government representation on directorates would cement public and private interests in this consolidated enterprise.

Insofar as the regional road would lead to an economic use of capital and thereby eliminate the wastes under the competitive system, the equity back of the various railroad securities should increase over a period of time. The development of a rate structure for each regional railroad on the basis that rates should be high enough to assure the proper standard of service, should improve the earning position of the road. * * *

### Factors Which Will Affect Railway Credit

If it proves impossible to reduce labor costs on the return of peace, particularly when the time is reached, as it must be reached, for an efficient economic readjustment and the consequent reductions in operating revenues, the position of the railway security holder would not be satisfactory if the roads are returned to their competitive conditions. Their future would be dependent entirely upon the breadth and courage shown by the Interstate Commerce Commission and the state commissions in so adjusting rates from time to time as to show a fair return and adequate protection to the security holder. * * *

Economic factors entirely outside the field of transportation, of course, will also affect railroad security values in the future and must be reckoned with. The higher cost of living, the depreciated purchasing power of the dollar, the level of interest rates, and the increasing burdens of taxation will all tend to emphasize the desirability and perhaps the necessity for higher yields. This situation would seem to indicate a greater demand for junior securities and second-rate bonds, and a consequently lesser demand for the higher grade issues. Higher values for the former, and lower values for the latter would then follow, because with the government's guarantee to assure interest payments, the quality of the security behind the obligation will temporarily not seem so important as before. * * *

Under the government's contract dividends are left subject to some uncertainty in the right of the director general to order the roads to expend money from their compensation, if they cannot get it from other sources, to pay for improvements or maintenance in excess of what they have spent. * * * The government's attitude towards the security holders as evidenced in its administration of their properties will affect the public attitude toward railroad security values. If there is an evident desire to protect these values and to safeguard the properties upon which they are based, so that public confidence is inspired, sustained and possibly appreciated values may be anticipated.

Railway financing has been practically at a standstill this year and pressing obligations have been met with advances by the government, which from April 1 to September 1 amounted to $241,000,000, together with various short term note issues.

If the practice of financing by the issue of short term or demand notes is continued, instability of the railroad financial structure must result even though payment of the notes is

not demanded during federal control. The situation resulting from the accumulation of a vast floating, or short term, debt maturing at the end of federal control, thereafter, would be dangerous. Even if long term mortgage bonds are ultimately accepted by the director general for these expenditures, that would only serve to perpetuate and exaggerate the already excessive proportion of debt in the railroad financial structure.

A further feature in the situation is the fact that these expenditures represent capitalization by debt of heavy expenditures at war prices. The standard contract expressly forbids the carriers to make any claim for loss at the end of federal control on account of these high prices. This would be relieved if the director general would authorize very liberal depreciation charges to operating expenses during federal control so as to amortize the excess cost or at least the greater part of it before the roads are turned back to their owners. The propriety of such charges is recognized by the government in computing costs under munition and other contracts and in figuring war taxes.

Still other important factors will enter into the future of the railroads. The shippers of the country must determine whether they will continue to be "penny wise and pound foolish." Their long continued fight against fair rates was largely instrumental in bringing the railroads to the situation they faced last winter. * * *

Will labor be satisfied with its fair share of the railroad dollar, or will labor, by organized power, make private ownership impossible, and compel the government to keep open these arteries of commerce?

It seems very certain that there must be either a radical change in the public attitude toward the railroads, a change which will invite the confidence of investors and make possible the efficient and proper operation under private ownership and direction, or there must be continued government interference. * * *

### Basis of Value In the Event of Federal Ownership

If government ownership is inevitable, then the basis of value upon which this ownership is effected becomes of major importance. There are many ways in which this might be effected. Instead of absorbing the entire 17 billions of dollars of railroad securities the government might be satisfied to leave the bonds outstanding in private hands, and merely absorb the stock. If the government should be disposed to allow the owners of the railroads a compensation based on a fair capitalization of their estimated rental value of approximately $950,000,000 a year, security owners would receive a fair return for their holdings. * * *

If the government buy the roads, the fact must be faced that decisions of the Interstate Commerce Commission indicate that its estimates would deprive the companies of many elements of value which they believe rightfully belong to them in any exchange. The contention has been made before the commission that no allowance should be made for the important element of good-will, for appreciation in real estate values, or even for investments made out of earnings. The importance of this last mentioned item may be realized, when the fact is borne in mind that the Pennsylvania Railroad alone has put back into its properties more than $200,000,000 out of earnings, representing actual invested value. * * *

In facing these contingencies the fact should ever be borne in mind that in no country has government ownership of railroads been successful, with the single, possible, exception of Germany, where under military rule it has achieved some degree of efficiency; yet not even there has it produced any marked improvement in initiative or progress in methods such as have marked private ownership. The railroads of the United States have served their public at the lowest cost, the lowest capitalization, and with the greatest efficiency of any railroads in the world. There has been nothing whatever in our experience with public ownership in this country to justify the assumption that it can be profitably assumed under normal conditions in the field of transportation.

## Tonnage Rating of the Standard Locomotives*

By H. S. Vincent

THE VERY COMPLETE REPORT on Train Resistance and Tonnage Rating presented to the Master Mechanics' convention in 1914 summarizes the many conditions which influence the hauling capacity of a locomotive as well as the variety of methods in vogue among the railroads for determining the proper rating. It is evident that there are many factors such as track maintenance, operating conditions, loading ratio, etc., which preclude the adoption of a standard method of rating applicable to all roads. There is, however, one important factor in rating locomotives in which present practice varies through wide limits and which would appear to be easily capable of standardization; this is the frictional resistance of cars.

The construction of freight cars and trucks is so standardized, that assuming the same degree of maintenance and lubrication there should be no difference in the frictional resistance for any given capacity. Yet, we find in Table I. of the report above mentioned, a variation in car resistance of over 40 per cent between the eastern and western divisions of the same road. It would seem, therefore, very desirable at this time when the railroads are being furnished with a large number of cars of identical design, that some concerted effort be made toward the adoption of a standard car resistance which would vary only with the capacity of the car and the operating speed.

As a basis for determining the tonnage rating of the standardized locomotives now being delivered by the Government to the railroads, the writer has prepared a series of charts for each of the three types of locomotives† so far built from which the maximum hauling capacity in tons of 2,000 lbs. can be read directly for any combination of speed and grade within the given limits.

The tractive effort formula used in the calculations is:

$$T = \frac{d^2 L .85 P}{W}$$

Where: T = Tractive power.
d = Diameter of cylinders in inches.
L = Stroke in inches.
P = Boiler pressure — lb. per square inch.
W = Diameter of driving wheels in inches.

The drawbar pull which varies with the resistance is shown on the charts by the inclined parallel lines. On straight level track this equals the tractive effort less the frictional resistance of engine and tender. In determining the latter resistance, the writer has adopted the method proposed by F. J. Cole, in which the engine and tender resistance is made up of the following:

(a) Engine friction or energy required to overcome the friction of the driving wheels, pistons, valves, crossheads, etc., equal to weight on drivers in tons x 22.2 lb.

(b) Resistance of engine and trailing trucks and two-thirds of loaded weight of tender assumed to be the same as the cars in the train.

(c) Head air resistance of engine, assumed to be 120 sq. ft. x .002 $V^2$, in which V = velocity of train in miles per hour.

*Copyright by H. S. Vincent, 1918.

†Similar charts will be prepared by Mr. Vincent for other standard locomotives as they are built and published in the *Railway Age* with the description of them.—Editor.

The tonnage curves are based on a frictional car resistance of four pounds per ton, which is a good average for the usual mixed freight trains with varying weights of cars and loading, when the rolling stock and roadbed are well maintained. However, the tonnage can be read from the charts for any other car resistance factor or any combination

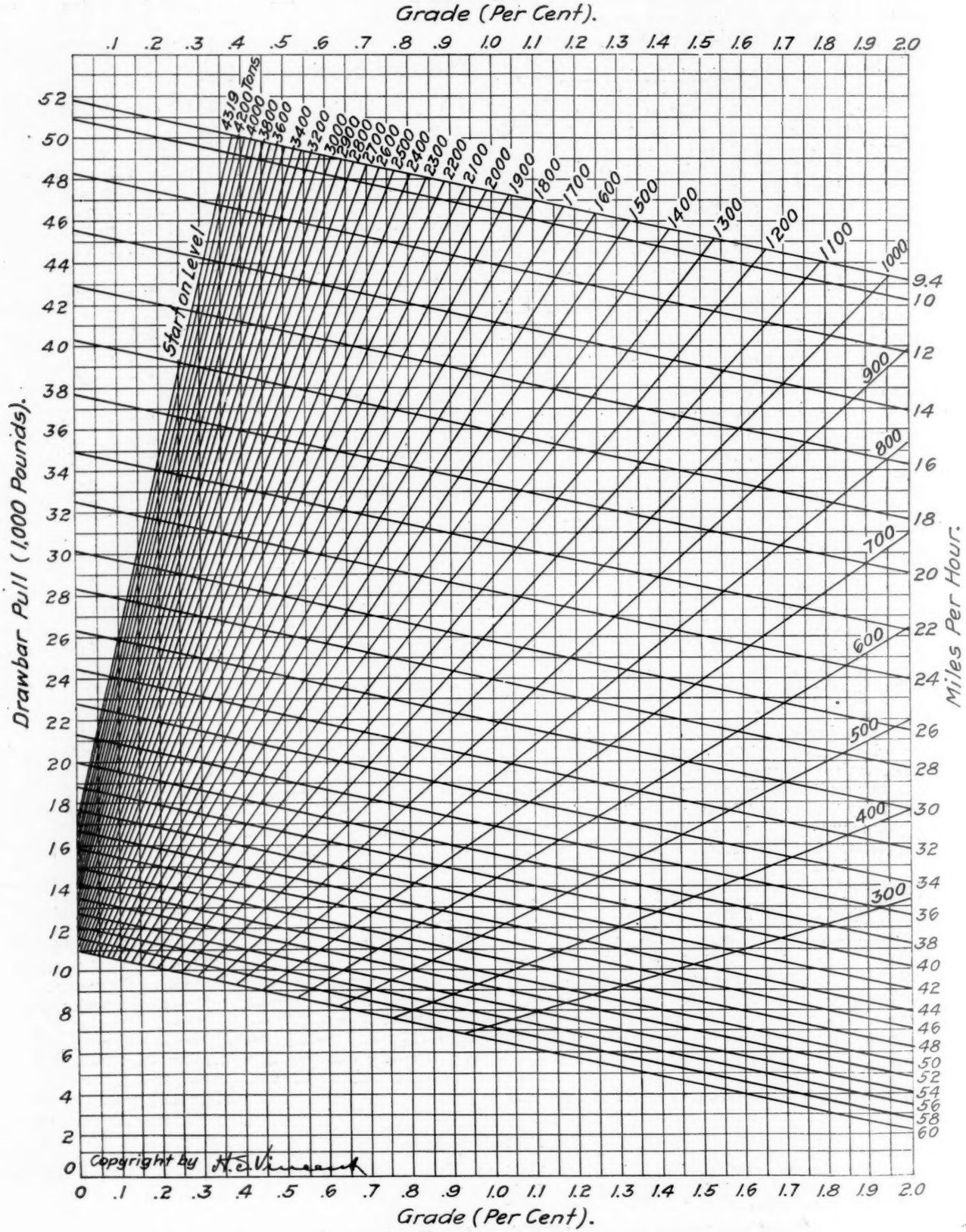



**Fig. 1—Tonnage Rating Chart for the U. S. Standard Light Mikado Locomotive**

*Has Your Office Force Subscribed 100 Per Cent?*

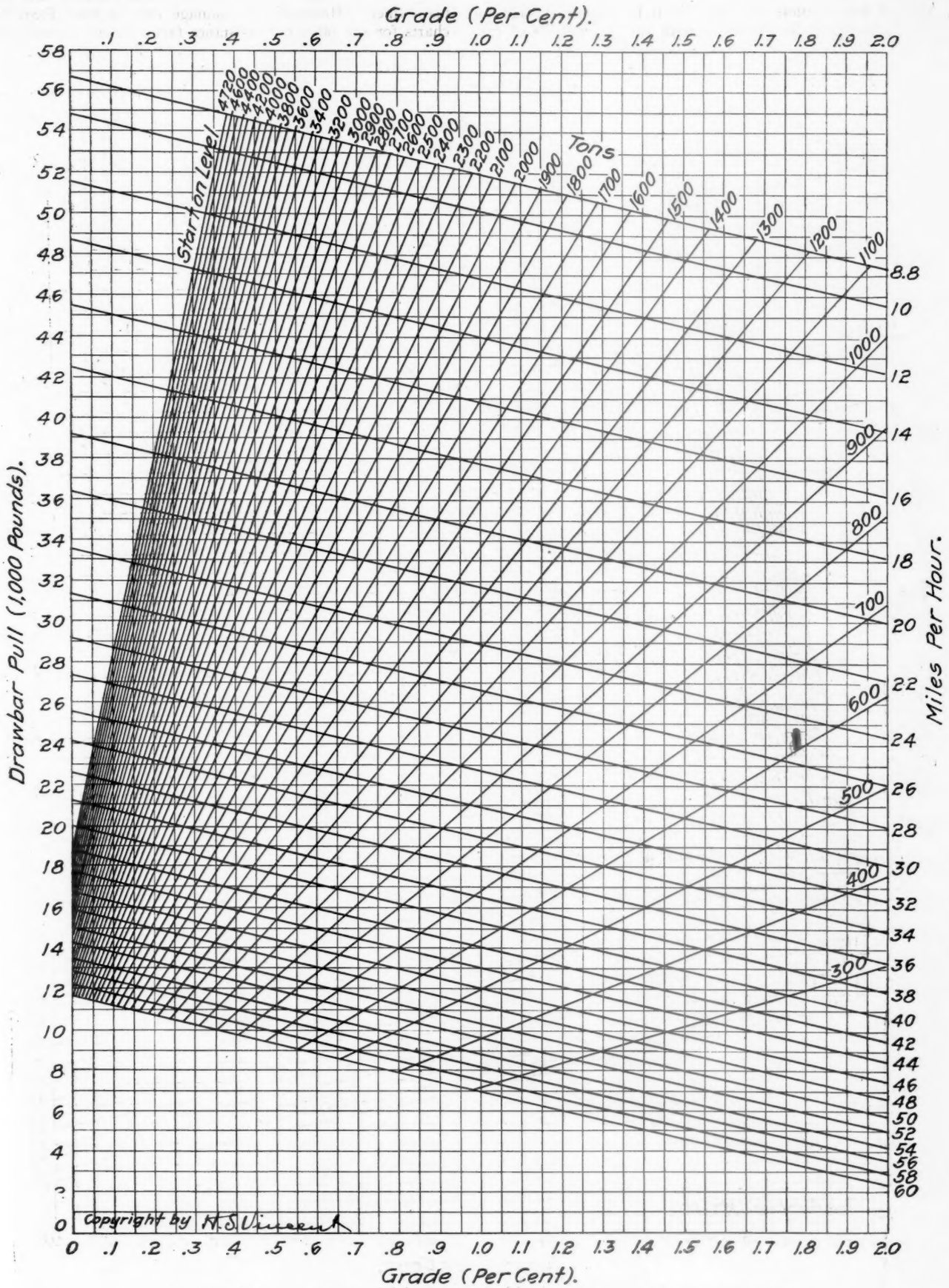



**Fig. 2—Tonnage Rating Chart for the U. S. Standard Heavy Mikado Locomotive**

***And in 100 Per Cent Amounts?***

of resistances simply by converting them into terms of grade, using the following multipliers:

One pound car resistance = .05 per cent grade.

One degree curve uncompensated = .04 per cent grade.

For example: Find the tonnage of the light Mikado locomotive on a one per cent grade at a speed of 18 m.p.h., with a mixed train having a frictional car resistance of four pounds per ton; also with a train of 50 tons loaded coal cars, having a resistance of three pounds per ton.

From Fig. 1 at the intersection of the ordinate for one

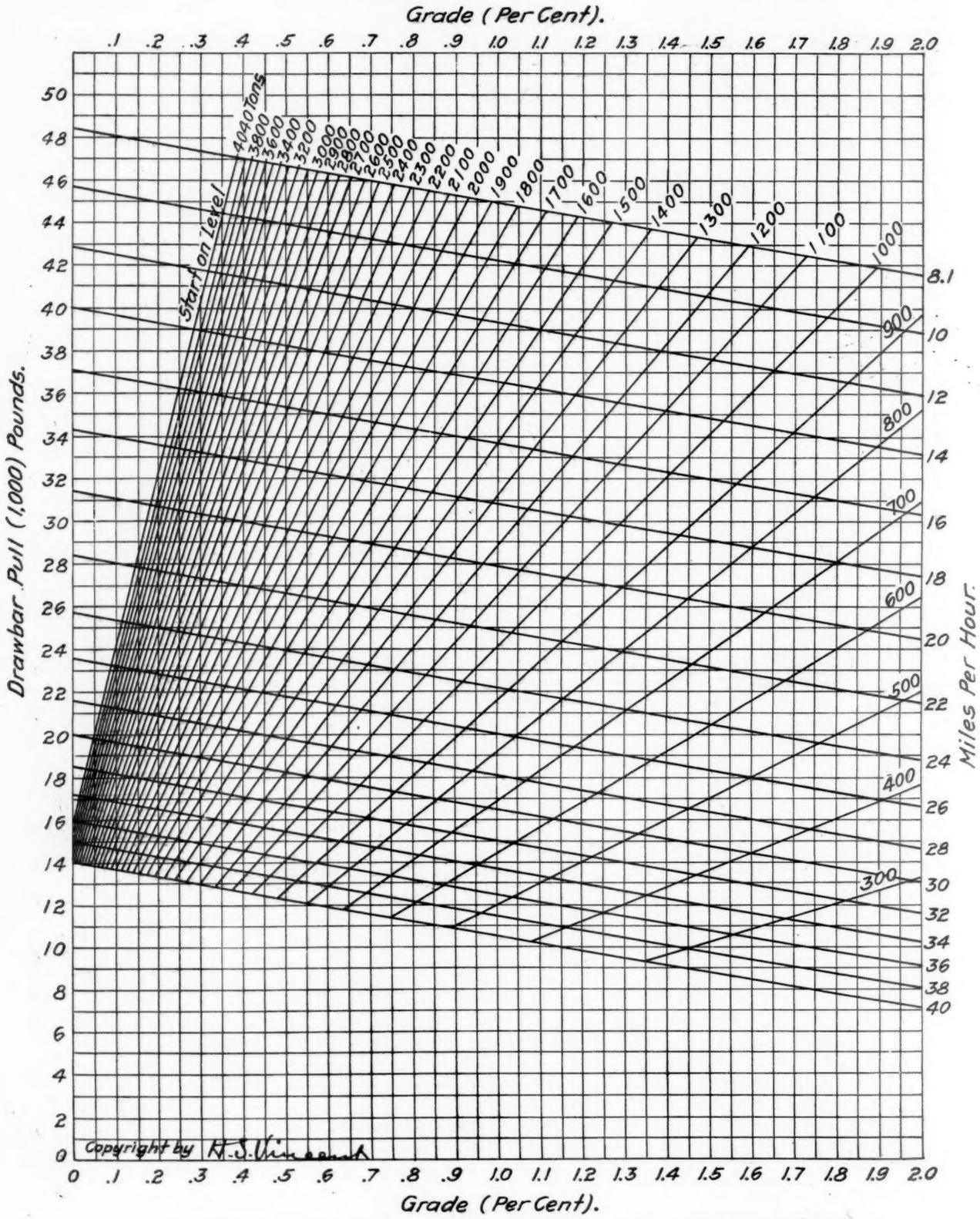



Fig. 3—Tonnage Rating Chart for the U. S. Standard Eight-Wheel Switching Locomotive

*Buying Bonds Is Not Enough*

per cent grade with the drawbar pull curve marked 18 m.p.h., we find the radial curve reading 1,500 tons.

For the train having 50 ton cars with three pound resistance, we select the ordinate equal to $1-[(4-3) \times .05] = .95$ per cent grade, which at its intersection with curve for 18 m.p.h., reads 1,575 tons approximately.

Taking the same example and combining the grade with an eight degree uncompensated curve, we have for the mixed train, an equivalent grade of $1 + (8 \times .04) = 1.32$ per cent, which at 18 m.p.h. gives a rating of about 1,130 tons, and for the train with uniform loads we have an equivalent grade of $1 + (8 \times .04) - (1 \times .05) = 1.27$ per cent, which at 18 m.p.h. gives a rating of approximately 1,180 tons.

*For Passenger and Express Service.*—To avoid confusion, the charts have been based on a frictional resistance of four pounds per ton, although in every case adjustment must be made for a greater resistance due to increased frictional resistance of passenger cars. For example: Find the tonnage which can be hauled by the heavy Mikado in passenger service on 0.5 per cent grade combined with six degree curve at 40 m.p.h.

From Table III we find the resistance for passenger coaches at 40 m.p.h. is 6.65 lb. per ton. The equivalent grade is then:

$.5 + (6 \times .04) + (2.65 \times .05) = .8725$ per cent.

From Fig. 2 at the intersection of the ordinate for .8725 per cent grade with the drawbar pull curve for 40 m.p.h. we find a rating of approximately 730 tons.

The maximum tonnage as given on the charts is that which the engine can start on a level straight track, assuming a starting resistance of 12 lb. per ton for freight trains.

The minimum speed shown on the charts is that equivalent to 250 ft. piston speed per minute, the highest speed at which the locomotive will develop its maximum drawbar pull.

Table I gives the resistance in pounds per ton for varying weights of freight cars; this covers speeds from 5 to 30 m.p.h. and is based on the assumption that the resistance is constant between these limits.

Table II is taken from Bulletin No. 43 of the University of Illinois, and represents tests by Prof. Edward C. Schmidt under actual service conditions. It will be observed that in this table the resistance per ton increases with the speed, and inversely, as the weight of the cars.

Table III gives the resistance for passenger cars at varying speeds. The data for this table, as well as Table I, is taken from Bulletin No. 1001, issued by the American Locomotive Company.

No allowance has been made for weather or temperature conditions or for drop in boiler pressure. In rating the locomotive a fixed percentage should be deducted from the maximum hauling capacity as given in these charts to suit local conditions.

TABLE I—FRICTIONAL RESISTANCE OF FREIGHT CARS

Speeds 5 to 30 M. P. H.

| Weight in tons | | Resistance (Lb. per ton) | |
|---|---|---|---|
| Loaded | Empty | Loaded | Empty |
| 15 | 6 | 6.40 | 10.30 |
| 20 | 7.8 | 5.91 | 9.60 |
| 25 | 9.5 | 5.44 | 9.05 |
| 30 | 11.1 | 5.07 | 8.45 |
| 35 | 12.6 | 4.74 | 8.05 |
| 40 | 14.0 | 4.40 | 7.65 |
| 45 | 15.3 | 4.18 | 7.26 |
| 50 | 16.5 | 3.90 | 6.85 |
| 55 | 17.6 | 3.65 | 6.50 |
| 60 | 18.6 | 3.43 | 6.26 |
| 65 | 19.5 | 3.24 | 6.00 |
| 70 | 20.3 | 3.07 | 5.82 |
| 75 | 21.0 | 2.90 | 5.63 |

TABLE II—FRICTIONAL RESISTANCE OF FREIGHT CARS

From Bulletin No. 43—University of Illinois—Edward C. Schmidt

| Speed, miles per hour | Train resistance—Pounds per ton. Column headings indicate average weights per car | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| 6 | 7.7 | 6.9 | 6.1 | 5.5 | 4.9 | 4.4 | 4.1 | 3.8 | 3.5 | 3.3 | 3.2 | 3.1 | 3.0 |
| 8 | 8.0 | 7.1 | 6.3 | 5.6 | 5.0 | 4.6 | 4.2 | 3.9 | 3.6 | 3.4 | 3.3 | 3.2 | 3.1 |
| 10 | 8.2 | 7.3 | 6.5 | 5.8 | 5.2 | 4.7 | 4.3 | 4.0 | 3.7 | 3.5 | 3.3 | 3.2 | 3.2 |
| 12 | 8.4 | 7.5 | 6.7 | 6.0 | 5.4 | 4.8 | 4.4 | 4.0 | 3.8 | 3.6 | 3.4 | 3.3 | 3.3 |
| 14 | 8.7 | 7.8 | 6.9 | 6.2 | 5.5 | 5.0 | 4.5 | 4.2 | 3.9 | 3.7 | 3.5 | 3.4 | 3.4 |
| 16 | 9.0 | 8.0 | 7.1 | 6.4 | 5.7 | 5.1 | 4.7 | 4.3 | 4.0 | 3.8 | 3.6 | 3.5 | 3.5 |
| 18 | 9.3 | 8.3 | 7.4 | 6.6 | 5.9 | 5.3 | 4.8 | 4.5 | 4.1 | 3.9 | 3.7 | 3.7 | 3.6 |
| 20 | 9.6 | 8.5 | 7.6 | 6.8 | 6.1 | 5.5 | 5.0 | 4.6 | 4.3 | 4.0 | 3.9 | 3.8 | 3.7 |
| 22 | 9.9 | 8.8 | 7.9 | 7.0 | 6.3 | 5.7 | 5.2 | 4.8 | 4.4 | 4.2 | 4.0 | 3.9 | 3.8 |
| 24 | 10.2 | 9.1 | 8.1 | 7.3 | 6.6 | 5.9 | 5.4 | 4.9 | 4.6 | 4.3 | 4.2 | 4.1 | 4.0 |
| 26 | 10.5 | 9.4 | 8.4 | 7.5 | 6.8 | 6.1 | 5.6 | 5.1 | 4.8 | 4.5 | 4.3 | 4.2 | 4.1 |
| 28 | 10.9 | 9.7 | 8.7 | 7.8 | 7.0 | 6.3 | 5.8 | 5.3 | 4.9 | 4.7 | 4.5 | 4.4 | 4.3 |
| 30 | 11.3 | 10.0 | 9.0 | 8.0 | 7.3 | 6.6 | 6.0 | 5.5 | 5.1 | 4.9 | 4.7 | 4.5 | 4.5 |
| 32 | 11.6 | 10.4 | 9.3 | 8.3 | 7.5 | 6.8 | 6.2 | 5.8 | 5.3 | 5.0 | 4.9 | 4.7 | 4.6 |
| 34 | 12.0 | 10.7 | 9.6 | 8.6 | 7.8 | 7.1 | 6.5 | 6.0 | 5.5 | 5.3 | 5.1 | 4.9 | 4.8 |
| 36 | 12.5 | 11.1 | 9.9 | 8.9 | 8.0 | 7.4 | 6.7 | 6.2 | 5.8 | 5.5 | 5.3 | 5.1 | 5.0 |
| 38 | 12.9 | 11.4 | 10.2 | 9.2 | 8.3 | 7.6 | 7.0 | 6.5 | 6.0 | 5.7 | 5.5 | 5.3 | 5.2 |
| 40 | 13.4 | 11.8 | 10.6 | 9.5 | 8.6 | 7.9 | 7.3 | 6.8 | 6.3 | 6.0 | 5.7 | 5.6 | 5.5 |

TABLE III—FRICTIONAL RESISTANCE OF PASSENGER CARS

| Speed, M. P. H. | Resistance, Lb. per ton | Speed, M. P. H. | Resistance, Lb. per ton |
|---|---|---|---|
| 5 | 5.89 | 42.5 | 6.90 |
| 7.5 | 5.60 | 45 | 7.20 |
| 10 | 5.51 | 47.5 | 7.35 |
| 12.5 | 5.42 | 50 | 7.85 |
| 15 | 5.42 | 52.5 | 8.30 |
| 17.5 | 5.42 | 55 | 8.65 |
| 20 | 5.46 | 57.5 | 9.03 |
| 22.5 | 5.48 | 60 | 9.45 |
| 25 | 5.60 | 62.5 | 9.95 |
| 27.5 | 5.70 | 65 | 10.42 |
| 30 | 5.85 | 67.5 | 10.95 |
| 32.5 | 5.95 | 70 | 11.45 |
| 35 | 6.20 | 72.5 | 12.00 |
| 37.5 | 6.40 | 75 | 12.60 |
| 40 | 6.65 | 77.5 | 13.20 |
| | | 80 | 13.85 |

## The Bridge and Building Convention

THE TWENTY-EIGHTH ANNUAL CONVENTION of the American Railway Bridge and Building Association will be held at the Hotel Sherman, Chicago, on October 15-17, inclusive. The convention will be largely in the nature of a war council to discuss the problems now confronting the bridge and building departments.

The program is as follows:

TUESDAY MORNING

10:00—Convention called to order.
Opening Business and Reports of Officers and Standing Committees.
11:00—Report of Committee on Water Supply, (a) Wooden tanks, (b) Sources of supply.

TUESDAY AFTERNOON

2:00—Report of Committee on Repairing and Strengthening Old Masonry.
3:00—Paper, Carrying Bridges Over, by C. F. Loweth, chief engineer, Chicago, Milwaukee & St. Paul.
4:00—Report of Committee on Use of Concrete.
4:45—Report of Committee on Shipping Company Material Economically.

TUESDAY EVENING

Moving Pictures of Recent Bridge Erection Work.

WEDNESDAY MORNING

9:30—Roundtable Discussion of Labor Conditions.
10:00—How the Bridge and Building Man Can Aid in Winning the War, by R. H. Aishton, Regional Director, Northwestern Region.
10:45—Report of Committee on Small versus Large Gangs for Maintenance Work.
11:30—Report of Committee on Labor Saving Equipment.

WEDNESDAY AFTERNOON

2:00—Address by W. H. Finley, President, Chicago & North Western.
3:00—Report of Committee on Bridge Floors.

WEDNESDAY EVENING

Association War Dinner.

THURSDAY MORNING

9:30—Papers and Discussion on the Material Problem, Unfinished and New Business.
Election of Officers and Selection of Location for next Convention.

THURSDAY AFTERNOON

Trip to plant of Universal Portland Cement Company, at Buffington, Ind.

## Orders of Regional Directors

PUBLICATION OF CHANGES IN PASSENGER TRAIN SCHEDULES.—The Southwestern regional director outlines methods to be followed for giving the public advance information concerning timetable changes. Printed notices of the effective date of all changes will be posted at stations on railroads or branches where changes will occur ten days before they became effective. In addition, all important changes of train schedules, giving the time at terminals, intermediate principal cities and junction points, and at the principal cities on connecting lines, will be announced in paid advertisements in newspapers on the lines affected. In daily newspapers, the first insertion will be made for ten days, the second for five days, and the third one day before the scheduled change becomes effective. Notices in weekly or semi-weekly papers will be inserted in issues published within a period of ten days prior to the date the schedule becomes effective. Standard forms to be followed in making these announcements are attached to the orders.

*Salary Increases to Subordinate Officials.*—The Northwestern regional director answers questions raised in connection with the pay of supervisory officials. There was some doubt in the minds of railroad officers whether assistant yard masters were to be paid for time in excess of eight hours per day at pro rata rates, or whether eight hours' compensation was to cover the total wages establishing a fixed basis per day or per month. On this point the regional director announces that they will be paid on an hourly basis for the actual hours worked, including the meal period, with a minimum compensation of eight hours per day. There was also some doubt as to the basis of compensating yardmasters at outside points. Where no assistant yardmasters are employed, day and night yardmasters at outside points will be paid monthly salaries based on day foremen's rates, plus five cents per hour, 10 hours per day, 30 days per month, with no overtime.

*Industry Tracks.*—The Southwestern regional director interprets General Order No. 15 as follows: The track or portion of a track on a railroad right-of-way used wholly or partly for the purpose of loading freight from and to cars, to and from an industry, and not in use as a public delivery track is to be regarded as an industry track and the cost of maintaining it will be borne by the industry. If, however, the track is used also for passing cars to and from other industries or other tracks of the carrier, the expense will be apportioned between the railroad and the industry or industries affected. A percentage division of the expense may be adopted by agreement if it will produce substantially the same results as the division of the expense in proportion to the amount of use of the track. With regard to the building of the new industry tracks, if traffic is not sufficient to warrant the railroad paying the expense of its construction, it is felt that the track should not be built at all.

*Re-routing Freight in Transit.*—The Northwestern regional director has issued instructions to govern the diversion enroute of carload freight to direct routes, or because of the embargoes or congestion. A notation is to be made either in ink or by rubber stamp on all waybills stating that the routing has been changed by the direction of the regional director, signed by the agent, and indicating the point at which the routing was changed. In addition a postal card, a standard form of which is included in the circular, will be sent by the agent to the consignee advising him of the diversion and the new route which his car will take. On the arrival at destination of shipments, the agent of the line by which the shipment was originally routed, as indicated on the waybill, will also be notified of the diversion.

*Ticket Forms.*—The Northwestern and Southwestern regional directors order the use of the following form of heading in printing new forms of local and interline tickets, conductors' cash fare receipts and baggage checks.

UNITED STATES RAILROAD ADMINISTRATION
W. G. McAdoo, Director General of Railroads
North & South Railroad

This heading will appear on the contract part of all tickets, but shall not be inserted on the agents' stub nor in the going portion of round trip local tickets, nor on agents' stub and coupons of interline tickets. On baggage checks the heading will be placed on strap or string check, and passengers' duplicate. The heading is to be used only until the Inter-Regional Committee for the Simplification of Ticket Forms issues its report.

*Supply of Cars for Government Hay.*—The Northwestern regional director announces that effective September 25, the Chicago office of the Inland Traffic Service of the War Department will handle all orders for cars to be loaded with hay and straw for government accounts. Orders for cars required in this service will be placed by that office direct with the railroad. A copy of the form of car order to be used is attached to the circular. Shipments of government hay and straw have been falling below the daily requirements of the various army camps, and to correct this situation the car supply available for such shipments will be given preference over non-government orders for cars.

*Free Transportation to Express Company Officers and Employees.*—The Southwestern regional director announces that officers and employees of the American Railway Express Company will be granted free transportation only when traveling in the interest of or upon the business of the express company. The principal officers of the express company, however, will have railroad passes in order to enable them to travel at their discretion upon business of the company.

*Applications for Grain Permits.*—The Central Western and Northwestern regional directors announce that considerable confusion has resulted from authorizing the application for permits to move grain to primary markets by either the shipper at the point of origin or the consignee at destination. Hereafter all applications will be made by the shipper only.

*Women as Section Laborers.*—The Eastern regional director advises that the director general is opposed to the use of women as section laborers and as truckers in freight depots and warehouses. He feels that this is not at all proper work for women, and that it will not only be viewed with disfavor by the public, but that in view of the wages now paid for this work it should be possible to secure men, and the women should be transferred into some class of service suitable to their strength and with proper regard to their health.

*Requisition for Cross Ties.*—The Northwestern regional purchasing committee directs that Form P. C. 4, Requisition for Cross Ties, and Form P. C. 5. Cross-Tie Situation, copies of which are attached to the circular, be used in placing all future orders for cross ties with the committee and for reporting the present supply of ties and future requirements.

*Stabilization of Live Stock Receipts.*—The Northwestern regional director announces that effective October 12, live stock shipments to stations in Minnesota will be received at the South St. Paul stock yards on any day except during the period from noon Saturday to 3 p. m. Monday of each week. This step has been taken to stabilize live stock receipts.

*Furloughing Men to Railroad Service.*—The director of the Northwestern region announces that an arrangement has been made with the adjutant general's office of the war department to grant indefinite furloughs, without pay or allow-

ances, to certain skilled, necessary railroad employees who are at present in military service in the United States. When such furloughs are granted by the war department, enlisted men will be directed to report to the employer who requested his services. The employer will be required to report to the regional director at the end of each month the status of the furloughed man. Standard forms to be filled out in making application for the return of an enlisted man and for making monthly reports on the character of his work are attached to the circular.

# Unification of Terminal Facilities in the West

## Extensive Changes in Operation Introduced to Prevent Recurrence of Congestion in Rail Centers

THE RAILROADS have suffered from a serious epidemic of freight congestion during the past two winters, a malady generally originating in the great transportation centers from which it radiated rapidly, blocking the further movement of traffic until the tracks of the terminals could be freed of their accumulations of cars. The fact that transportation paralysis results largely from the overcrowding of terminals has made the terminal problem a subject of intensive study by officers of the Railroad Administration. In the West this problem has gotten beyond the investigation stage and many changes in terminal operation have already been inaugurated. The guiding principle in all these reforms has been the unification of the facilities of all the railroads and the elimination of all unnecessary duplications of service.

The main end sought, of course, has been to keep the tracks clear and thereby facilitate the uninterrupted circulation of traffic. Efforts in this direction have not been unimpeded; on the contrary, grain receipts at western primary markets during the past two months have been unprecedented in volume. In the two weeks beginning August 5, over 23,000 carloads of grain were received in Chicago and 19,500,000 bu. were shipped out, the greatest volume of grain ever handled in a similar period in any primary market in the world. While the first consideration in terminal unification has been to prevent congestion, incidental, but nevertheless important, purposes have been to conserve man power and effect operating economies. Savings achieved in railroad operation in the Chicago switching district during 1918 up to September 4, are estimated at $1,084,739 per annum. The unification of the Minneapolis-St. Paul terminals has resulted in economies equivalent to $472,954 a year; at Omaha an estimated saving of $212,970 a year has been effected; in the St. Louis-East St. Louis switching district $437,466; and in Duluth and Superior, $126,376.

### Eliminating Duplications in Switching Service

A brief outline of what has been done in the Chicago switching district, which is under the jurisdiction of the Northwestern regional director, will indicate the character of the work which has been done in all the western terminals. In general, such direct interchanges between roads as were not previously eliminated under private operation, have been abolished when the volume of such business has been light and this traffic has been taken over by the connecting belt lines. For instance, the Pittsburgh, Cincinnati, Chicago & St. Louis now delivers cars to the Belt Railway of Chicago at Clearing yard for delivery by the Belt to the Chicago, Milwaukee & St. Paul at Galewood yard. This traffic is merged with other business destined to Galewood yard with the result that the movement is larger than when the Pan Handle made direct deliveries to the St. Paul. Under this plan two eight-hour locomotives have been saved by the Pan Handle for other service while the Belt has increased its use of power to the extent of five engine hours a day. The net saving effected by the new arrangement has been, therefore, 11 engine hours per day.

This arrangement has the additional advantage of reducing the number of engines on the main line tracks and in the receiving line's yards.

While direct interchange is still maintained when there is sufficient business to give locomotives proper tonnage, the performance of this service has been divided between the roads involved in such a manner as to eliminate light engine mileage. In other words, the delivering engine is given a return load by the receiving line. An example of one-line switching service is the present arrangement for the handling of interchange between the Michigan Central and the Atchison, Topeka & Santa Fe at Joliet. Under this plan switching is performed exclusively by the Michigan Central, with a net saving of eight engine hours per day.

Another important reform inaugurated in chicago was the establishment of one-line switching service at industrial plants. For instance, the industries in the East Chicago-Hammond-Calumet district are served exclusively by the Baltimore & Ohio Chicago Terminal and the Indiana Harbor Belt, with a resultant saving of 22 engine hours per day. This plan gives the line performing the switching a larger number of cars to handle, thereby insuring tonnage to the locomotives utilized for the service. It reduces interference between switch engines from their operating bases to industries, prevents loss of time by one engine crew waiting until another crew has finished its work, and eliminates the necessity of separate demurrage checks by the respective roads performing switching service when such work is done on a tariff basis. While in some cases the plan results in increased car haul, the reduction in yard classification expenses on the lines which discontinue performing the switching service, exceeds the added expenses incurred through increased switch-haul.

The handling of l. c. l. merchandise cars and trap cars is also being unified. For instance, traffic of this nature to and from industries located on the Chicago Junction is now handled exclusively by that road, which makes interchanges with other lines at Leavitt street yard. No longer does each road go direct to the various industries for this traffic and there is a net saving estimated at 56 engine hours per day and 453 car miles per day.

### Conserving Man Power

In addition to inaugurating joint switching as extensively as practicable, the Railroad Administration has consolidated other facilities and has unified operating organizations whenever this could be done advantageously. Although one of the ends sought thereby was a reduction in operating expenses, a no less important purpose was the conservation of man power. Labor is scarce and by eliminating duplications of service, employees are made available for other railroad work.

In many instances station forces have been united without injury to railroad service. The station forces of the New

York, Chicago & St. Louis and the Elgin, Joliet & Eastern at Hobart, Ind., for example, were consolidated with a resultant net saving of $1,021 per month. The agencies of the Grand Trunk and the Elgin, Joliet & Eastern at Griffith, Ind., have been likewise consolidated with a net saving of $450 per month. Car checking, car inspection and demurrage forces have also been unified. The consolidation of car checkers at Forest Park was made possible through the inauguration of one-line switching service between the Baltimore & Ohio Chicago Terminal, and the Minneapolis, St. Paul & Sault Ste. Marie. The services of one car checker on the latter road were dispensed with. Demurrage forces at the Crane Company's plant at Forty-third street and Kedzie avenue, and also in the territory along Forty-ninth street between Western avenue and Central Park avenue at industries on the Chicago River & Indiana and the Indiana Harbor Belt, were consolidated with a reduction in forces resulting in a net saving of $80 per month. Through the unification of car inspection forces of the Chicago & North Western and the Belt Railway at Cragin, seven car inspectors were released with a net estimated saving of $800 per month.

A number of freight houses which owed their existence purely to competitive conditions were also closed and their business taken over by houses of other lines. The Kinzie street freight house of the Baltimore & Ohio was closed and its team track facilities abolished with a net estimated saving of about $1,100 a month. The Erie street and Webster avenue freight stations of the Erie which were maintained in connection with barge service on the Chicago river were also closed with a resultant saving estimated at $3,041 per month.

Railroad mechanical facilities have also been unified in some instances. The roundhouse facilities of the Indiana Harbor Belt and the Grand Trunk at Blue Island have been consolidated under an arrangement whereby the Grand Trunk switch engines working at Blue Island are housed in the Indiana Harbor Belt roundhouse instead of returning to Hayford. The net saving achieved through this change is estimated at seven engine hours per day. Car repair forces at the Union Stock yards have also been consolidated. Under the plan introduced the Chicago Junction forces make light repairs to cars going out over the various lines, relieving other lines of the necessity of maintaining their own forces. The change has resulted in the release of five car repairs and a net estimated saving of $525 per month.

### Keeping Traffic Out of the Chicago Terminals

A very important change in railroad operation in its effect on terminal operation in the Chicago switching district is the rerouting of through traffic via the outer belt line, thus relieving the tracks of the terminals of a large stream of traffic. The Chicago, Milwaukee & St. Paul catches eastbound traffic at Milwaukee, Wis., consolidates it in train lots, and changes the routing there to the extent of specifying delivery to the Elgin, Joliet & Eastern and by that road to one eastern connection. The Chicago, Burlington & Quincy does the same thing at Galesburg, Ill., and Savanna, and the Chicago & North Western at Clinton, Iowa. The staff of the Eastern regional director is considering the introduction of the same practice with reference to through west-bound traffic. This plan will undoubtedly greatly assist in keeping the tracks of the Chicago terminal district clear and at the same time will relieve the belt line of the necessity of putting the cars through its classification yard for distribution to separate eastern connections.

Another means which is being used effectively to minimize cross-town switching in Chicago is the control of coal deliveries in the terminal district. Through the efforts of the supervisor of coal traffic of the Railroad Administration at Chicago, mine operators served by both the Chicago, Burlington & Quincy and the Illinois Central are sending shipments over the road upon which the consignee is located.

The success of this plan is, of course, limited to some extent by variations in the respective car supplies of the two lines, but when it is possible mine operators are shipping over the road that goes direct to the point of final delivery. In the first half of September only 34 cars from joint mines were delivered by the Burlington to the Illinois Central in Chicago, as compared with 100 cars so delivered during 10 days in June. This comparison, which is typical, indicates that the mines are actively co-operating with the railroads in working for a reduction in intra-terminal switching.

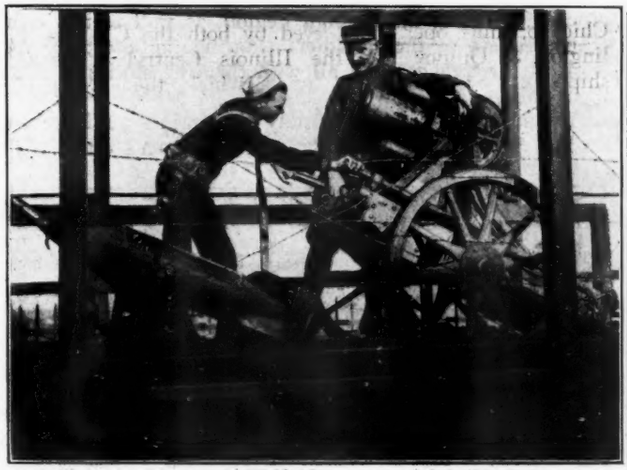
Similar steps have been taken by the terminal manager to reduce cross-town switching of grain. As far as possible grain is delivered to elevators located on the tracks of the road-haul carrier. Such a route is termed "first preference." Other routes are given second, third, fourth, fifth and sixth preference according to the amount of terminal switching which they involve. For the guidance of railroads, shippers and consignees the terminal manager has prepared a chart showing the names of all grain elevators in Chicago with the capacity and railroad location of each. In addition, the road haul carriers are graded from a standing as a first preference route to a sixth preference route, with respect to each elevator listed.

### Handling the Greatest Grain Movement on Record

The plan of regulating deliveries to elevators, as above outlined, was recently worked out as a means of assisting the railroads in Chicago in handling the greatest grain receipts in history. This unprecedented influx of grain commenced early in August. The existence of a maximum price on grain this year removed all incentive on the part of the farmer to hold his products, with the result that grain has been shipped direct from the thresher to the primary market. On July 29, 1918, there were 8,199,000 bu. of grain in Chicago elevators as compared with 383,000 bu. on July 30, a year ago. Grain was being shipped into Chicago so rapidly that it threatened to swamp the terminals. This result was only prevented through the closest co-operation between the railroads, represented by the terminal manager's staff, the Grain Corporation of the Food Administration, the "To Arrive" committee of the Chicago Board of Trade and the State Grain Inspection Department. Members of these organizations constituted themselves a committee meeting daily in the office of the grain corporation. Every operation that had to do with the prompt handling of grain was speeded up and in consequence the abnormal receipts were disposed of successfully.

As was previously stated, the greatest volume of grain ever received in a primary market during a similar period of time arrived in Chicago in the two weeks beginning August 5. Likewise the greatest quantity of grain ever shipped from a primary market in the world left Chicago in that fortnight. On one single day there were as many as 10,500 carloads of grain on Chicago tracks, an equivalent of 80 miles of railroad cars. When it is recalled that Chicago in those two weeks experienced some of the hottest days in its history, it becomes apparent that the movement of this traffic without congestion and without placing a single embargo was indeed an unusual feat. It was only on September 16, when the amount of grain in Chicago elevators had exceeded 29,000,000 bu. as compared with 3,400,000 bu. in 1917, and there was no prospect of any let-up in receipts, that the Car Service Section of the Railroad Administration inaugurated a permit system for controlling the movement of grain to primary markets, as was noted in the *Railway Age* of September 20.

*Has Your Office Force Subscribed 100 Per Cent?*



*The Liberty Loan Special Now Touring New York State. Photos from Underwood & Underwood, N. Y.*

# Railroads Well Started on Liberty Loan Campaign

## Indications That All Former Records Will Be Broken; Liberty Loan Specials a Big Feature

THE LIBERTY LOAN CAMPAIGN had hardly started last Saturday when Director General McAdoo received the following telegram from General Manager Wardlaw of the Central Vermont:

"995 out of a total of 1,249 Central Vermont employees at St. Albans have subscribed $99,600 to the Fourth Liberty Loan. By their response the city of St. Albans has gone over the top with 100 per cent of its quota within two minutes after one o'clock this morning."

Mr. McAdoo also received the following telegram from B. L. Winchell, regional director of the Southern Region:

"Thinking you would not mind if we started on our Liberty Loan work a day ahead of the official schedule, I am glad to be able to report that I have word that the regional director's office in Atlanta has received subscriptions from every one of its employees before closing the office this afternoon so that we have one hundred per cent on the lists on September 27. Will advise you amount later, but am sure you will be more interested in the unanimous response. I am communicating this information to all our federal managers in the hope that they can duplicate this on every line in the region under federal control."

### Liberty Loan Specials

One of the features of the Liberty Loan drive this time consists of the Liberty Loan Specials. Twenty-four of these trains are now moving throughout the country to spread the Liberty Loan message to almost every town that is reached by a railroad. Each train has an exhibit of American and Allied equipment as well as a collection of trophies captured from the Germans. The trains are making only a short visit in each town, but their coming is being so well adver-

THE Goverment must borrow from the people six billion dollars for which it gives its obligation in the form of Liberty Bonds bearing interest at 4¼ per cent. per annum.

The Government needs this money to enable our brave army and the brave armies of our Allies to keep up the push against the Germans now so auspiciously begun.

We cannot lick the Kaiser without this money and the sooner we get this money and the sooner we convert it into the necessary munitions and supplies for our heroic boys, who already have the Huns on the run, the sooner will they finish the dangerous job we have entrusted to them.

I earnestly urge every railroad officer and employee who loves his country to go the limit of his means to lend to the Government by purchasing Liberty Bonds.

Director General W. G. McAdoo

tised that great throngs are greeting them. The work of the speakers, returned soldiers, and others on the trains, is proving most effective both from the standpoint of enthusiasm and subscriptions. In the state of New York no less than $2,000,000 in bonds was sold by two trains last Tuesday alone.

The train which is now touring New York state is typical of several trains throughout the various reserve districts, not only from the point of view of the makeup of the trains, but of the successful work they are doing. This train is scheduled to visit 82 small towns in 22 days. It is being greeted with the utmost enthusiasm and each town it visits is usually prepared to meet it with bands, home guards, and citizen committees. Even in smaller places where the train does not stop crowds line the sides of the road to cheer the train as it goes by.

The train is made up of a sleeping car, a dining car, a baggage car which has been turned into a museum and two flat cars upon which are mounted the large trophies. In the museum are German machine guns, bomb throwers, bomb rifles, flame throwers, bayonets, grenades, trench knives, trench periscopes, wearing apparel and lesser odds and ends. On the flat cars are cannon captured from the Germans by our boys in France. The most conspicuous trophy is a long barrelled 122 mm. field piece captured by the Americans at Chateau-Thierry. Before the Germans abandoned this gun they stuffed the end of the barrel and then fired a shell which exploded and mushroomed the end of the piece. There are also a 150 mm. field gun, a 140 mm. trench mortar and a 240 mm. mortar, as well as some enemy airplane bombs which were seized before they had been dropped by the German airplanes. In addition to the speakers, the train has with it two men from Pershing's army, two representatives of the Foreign Legion, as well as two Canadians, all six of these soldiers showing the effects of their work in the trenches and all with thrilling stories to tell of their doings.

At one town visited Saturday the train's audience subscribed $140,000, over one-half of the town's quota. The next town subscribed $157,000, almost the entire quota, and the third town, with $125,000, made up one-third of its quota.

*Photo from Underwood & Underwood, N. Y.*

**An Interested Audience**

## A Bibliography on Winter Railroading

WITH THE MEMORY of last Winter's experience still fresh in mind and with a knowledge of the absolute necessity for the continuity of railway communication under existing circumstances, few subjects are of greater importance at the present time than the operation and maintenance of railroads under winter conditions. For this reason, the list of references to articles on winter service on railroads, recently issued by the library of the Bureau of Railway Economics, Washington, D. C., will be of material interest and unquestioned value to railway men. The scope and classification of the matter covered in this bibliography is indicated by the following list of subjects:

Maintenance of way in winter
- General discussion of problems and methods.
- Track protection methods in detail
- Snow fences
- Snow hedges
- Snow sheds
- Miscellaneous methods
- Care of water stations
- Switches
- Yards, terminals, etc.

Operation of railroads in winter
- General discussions
- "Keeping the line open" during blizzards, floods, etc.
- Locomotive performance under winter conditions
- Thawing frozen cars, etc.
- Snow plows, spreaders, etc.

Snow fighting on electric roads
Winter service conditions, Alaska and Canada
Winter service conditions, European railroads

The treatment under each subject is chronological so that the reader obtains a summarized history of the subject in which he is interested. The list covers 53 mimeographed sheets and each item is not a mere index of the article, but includes a brief synopsis of the matter covered. For instance, the reference to an article in the *Railway Age* of February 15, 1918, entitled "Pulling the Chicago Terminals

***Every Railwayman a Liberty Bond Subscriber***

Out of the Snow," occupies nearly an entire sheet. The record goes back as far as 1871, and aside from its value in giving the busy railroad man a reference to the most valuable articles in current publications, this bibliography possesses not a little historic interest. For instance, the eight pages devoted to snow plows give a vivid idea of the controversies occurring in the early days of the development of modern snow moving equipment, while an article published in 1871 in Big Railroading, describing a blockade of the Union Pacific in the same locality where the blockade occurred in the winter of 1916 and 1917, is of especial interest because of the rare occasions upon which serious snow troubles have occurred in that locality.

## Distribution of Overseas Traffic

THE EXPORTS CONTROL COMMITTEE, appointed June by order of the secretary of war, the secretary of the navy and the director general of railroads, has issued a zone routing chart to govern the distribution of overseas traffic through the various available ports with consideration to efficiency and economy in transportation service, both inland and ocean, based upon the war traffic burden of the rail carriers, port facilities and emergency requirements. The zone boundaries are indicated by the lines on the map and the instructions as to the routing from each zone are shown below the map, lettered to correspond with the zone lettering, as follows:

A—Via North Atlantic range, or Montreal.
Exception: From territory on and west of the Buffalo-Pittsburgh line freight may be routed via South Atlantic and Gulf ranges, when necessary to fill tonnage.

B—Via South Atlantic range; Gulf range (east of Mississippi river) or Hampton Roads.
Exception: Southern iron districts may be routed via Texas ports when necessary to fill tonnage.

C—Via Gulf range or South Atlantic range.

D—Via Gulf range, or South Atlantic range, or New York, Philadelphia, Baltimore, Hampton Roads, or Montreal (through Chicago).

E—Via Gulf, South Atlantic or Pacific ranges.
Exceptions: Fresh fruit and fish, and canned fruits and fish may be routed through North Atlantic range.

F—Via Gulf, South Atlantic or Pacific ranges.

G—Via Gulf, South Atlantic or Pacific ranges.
Exception: Fresh fruit and fish, and canned fruits and fish may be routed through North Atlantic range.

Points circled on boundary lines are neutral as to territories on either side.

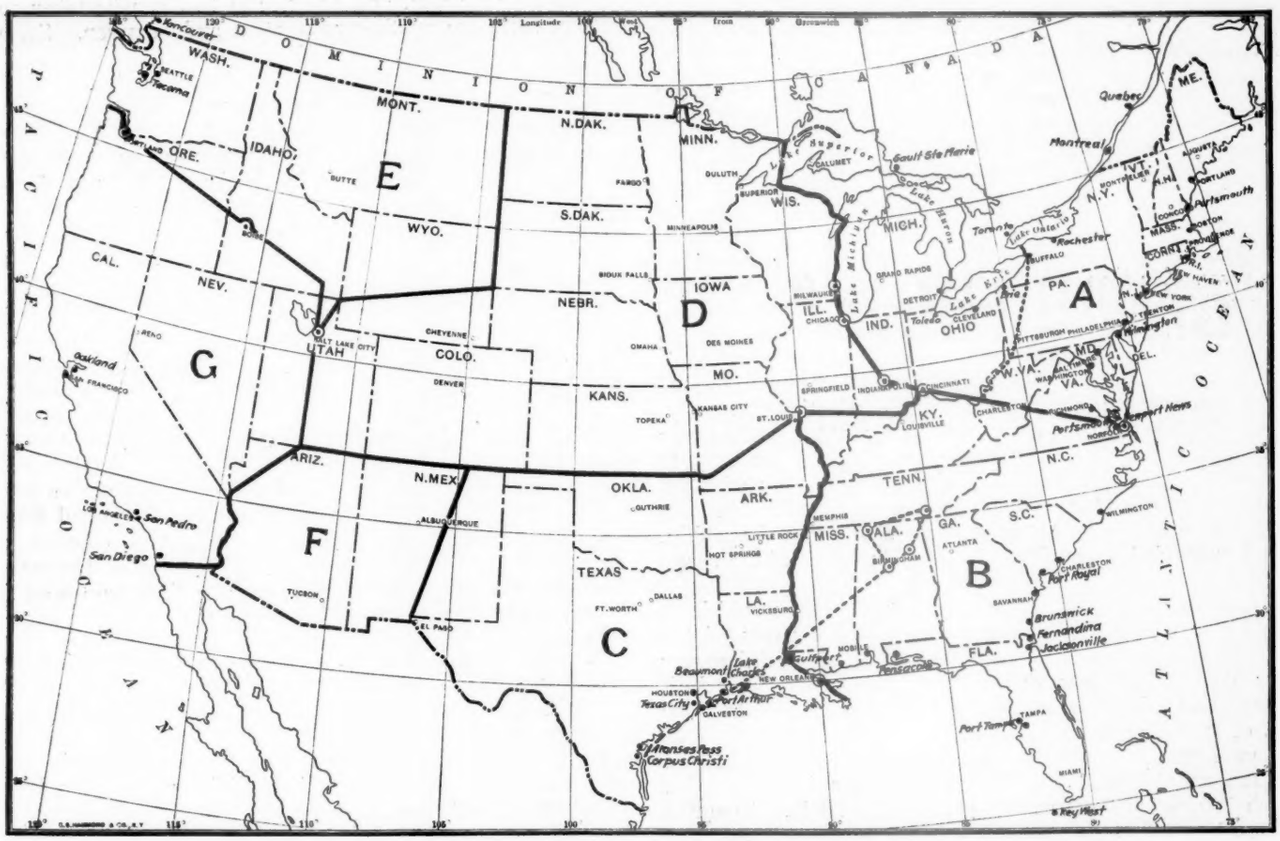
Note—Except in extreme emergencies, shipments should not be routed via rail from one port to another, nor from a point near a port to a more distant port, within the same zone.

The ranges of ports referred to are:

North Atlantic Range—
Portland, Me.,
Boston,
New York,
Philadelphia,
Baltimore,
Wilmington, Del.,
Hampton Roads:
Norfolk,
Newport News,
Portsmouth,
Pinners Point,
Lamberts Point,
Sewells Point.

South Atlantic Range—
Wilmington, N. C.,
Charleston,
Port Royal,
Savannah,
Brunswick,
Fernandina,
Jacksonville.

Gulf Range (East of Miss.)—
New Orleans,
Gulfport,
Mobile,
Pensacola,
Port Tampa,
Tampa.




**Zone Routing Chart Governing Distribution of Overseas Traffic Through the Several Ports**

Gulf Range (West of Miss.)—
Lake Charles,
Beaumont,
Port Arthur,
Orange,
Sabine Pass,
Galveston,
Texas City,
Houston,
Aransas Pass.

Pacific Coast Range—
Vancouver,
Seattle,
Tacoma,
Portland, Ore.,
San Francisco,
Los Angeles (San Pedro),
San Diego.

Texas Ports—
Lake Charles, La.
Beaumont,
Port Arthur,
Orange,
Sabine Pass,
Galveston,
Texas City,
Houston,
Aransas Pass.

*THINK! Have You Bought Your Limit?*

George D. Ogden, chairman of the committee, recently issued some general instructions regarding the handling of export freight in part as follows:

In the distribution of the combined amount of all exports, the existing traffic control instrumentalities will be used as far as practicable, including the committee of freight traffic control in charge of the Virginia gateways, Washington, D. C., and the committee of freight traffic control in charge of the Ohio river gateways, Cincinnati, Ohio.

Freight consigned to or for account of the war department will be subject to transportation orders issued by the chief of Inland Traffic Service.

Freight consigned to or for account of the war department will be exempt from embargoes unless otherwise ordered by the United States Railroad Administration.

Freight consigned to or for account of the navy department and marine corps will be exempt from embargoes, unless otherwise ordered by the United States Railroad Administration.

Export freight consigned to or for account of the British, French and Italian governments, together with commercial export freight, will be subject to railroad shipping permits of the freight traffic committee, North Atlantic ports, New York, which committee now exercises supervision over all ports, Boston, Mass., to Norfolk, Va., and Newport News, Va., inclusive.

Export freight consigned to or for account of the British, French and Italian governments, together with commercial export freight, via all ports, Wilmington, N. C., to Galveston, Tex., inclusive, is subject to supervision of the Southern export committee, Atlanta, Ga.

Permit system of control used by the freight traffic committee, North Atlantic ports, having jurisdiction over all ports, Boston, Mass., to Norfolk, Va., and Newport News, Va., inclusive, as now exercised, will continue. The supervision of the Southern export committee over all ports, Wilmington, N. C., to Galveston, Tex., inclusive, as now exercised, will also continue.

It is contemplated similar system of supervision will be established for all export freight via Pacific coast ports when occasion requires, announcement of which will be made in due course.

# Removing Mud from Locomotive Feed Water

By C. P. Van Gundy

Chief Chemist, Baltimore & Ohio, Baltimore, Md.

IN THE VARIOUS articles which have been published on the subject of water supply and water treatment, there is one phase of the subject that is not given the prominence it deserves. We see frequent figures on the soluble scale-forming solids, the effects of scale, its cost and the methods of preventing and removing it, but little mention is made of suspended matter or in plain words, mud. Fine silt of course is often deposited and held on the tubes and sheets as part of the scale, as is readily determined by examination and analysis, but where mud is present in large quantities in the water supplied to the boiler, besides increasing the tendency to foam, it is thrown down as sludge, and, together with the loosened scale, settles to the portions of the boiler where circulation is least active. If it is not then removed speedily, mud burns follow, resulting in leaks, buckling of the sheets and the letting down of staybolts.

A curve showing the frequency of mud burns would have its high points in the freshet season. The rivers of the Middle West carry five or six pounds of suspended matter per thousand gallons during high water periods, which means that a locomotive may take into its boiler 100 to 120 lb. of mud on one trip. As an extreme case an analysis of a small stream supply at a dispatching point showed 10 lb. of suspended matter per 1,000 gal. of water, indicating that each locomotive sent out was given 70 to 90 lb. of mud in its tank.

To counteract the addition of mud frequent washing of the boilers is necessary and even then mud burns occur with greater or less frequency. I recall an instance of 16 failures in one month in one district because of mud, with the consequent loss of time and damage to the boilers. If we assume two days out of service as the average result of a mud burn and $50 per day as the net earning value of a locomotive, we have $1,600 loss for the month for lost time only in the above case, without including the cost of labor and material for repairs.

The following aggravated case came under my notice last winter. A Mikado locomotive just out of the shop was put in service on a division where the water was of fair quality and was run one month. Because of a thaw the streams became muddy and on the third day of the month, the boiler was burned and the engine sent to the shop. She was in the shop three days; 28 staybolts were renewed and the boiler washed. On the seventh of the month it reached the other end of the division, where it was again shopped for two days, the boiler washed and 23 bolts renewed. We have, then, as a result of one mud burn, 51 staybolts renewed and five days out of service. Taking the net earning value of a locomotive as before and including the cost of material and labor, extra boiler washing and extra firing up, we have very close to $400 as the cost of this one mud burn. If we take the gross income from the use of the locomotive as a basis, the loss would be about $900 at the time of the occurrence, and, for a like occurrence now, more than $1,000.

In another case, a locomotive was dispatched after being given water from the small stream above mentioned. Water was taken at two or three points from a muddy river, and a mud burn resulted before the engine had reached the end of its run. Something over one hundred staybolts had to be renewed and the locomotive was out of service four days.

Instances could be multiplied. It can be said that mud burns occur frequently enough to be a serious hindrance to economical operation, and any means that can be taken to prevent them are worth consideration and adoption. Some of our operating friends will tell us that the cure is to wash our boilers more often, but that is not always feasible; it costs money for labor, water and fuel, puts more or less strain on the boiler, and keeps the locomotive out of service. Boiler compounds do not cure, in fact they often aggravate the trouble, so that the only thing left is the rational one of removing the mud before feeding the water to the boiler. When the mud is very heavy, most of it can be removed by allowing sufficient time for it to settle in the tanks and using a float pipe for drawing off the partially cleared water from the top, but obviously the better way is to take it all out by filtration or by filtration and treatment in specially constructed plants.

It might be observed that there are few instances where it would be advisable simply to filter the water. Most turbid waters carry, in addition to the suspended matter, certain removable quantities of scale-forming solids in solution, and a plant to remove these along with the mud would cost very little more to install than one for the removal of the suspended matter alone.

Taking as an example again the rivers of the Middle West, we find that they average 1 to 1½ lb. of suspended matter per 1,000 gal. throughout the year, with the above mentioned 5 or 6 lb. maximum, while the incrusting solids average 2 lb. per 1,000 gal., with a maximum of 3½ to 4 lb.. It is evident in this case that the incrusting solids can be reduced to ¾ lb. or less per 1,000 gal., at the same time that all of the suspended matter is removed.

This method has the further advantage that in treating to reduce hardness or scale-forming solids, a more or less flocculent precipitate is formed, which tends to collect the suspended matter, the whole settling readily. This method also generally renders unnecessary the addition of alum or other coagulant; which must be used when filtration alone is employed and which tends to cause the formation of a harder scale in the boiler.

Enough has been said to call attention to the damage that may result from the use of turbid waters. It is highly desirable to eliminate any condition that calls for the expenditure of labor, the use of material, and lessens in any way the service or mileage we get out of our locomotives, when we need every pound of power we can get for the transportation of our soldiers and war material.

# Increased Traffic Shown by Report

BOTH FOR THE MONTH of July and for the seven months ending July 31, the railroads handled this year a greater ton mileage of revenue freight than in the corresponding periods of 1917, according to the monthly report of freight train operation compiled by the Operating Statistics Section of the Railroad Administration. The report for July shows a considerable improvement in efficiency as compared with the preceding months of this year. An increase of 1,897,376,211, or 5.6 per cent, in the revenue ton-miles is reported, with a decrease of 1.2 per cent in freight train miles and of 1 per cent in total car miles. The average tonnage per train was increased 5.7 per cent and the average carload 10.3 per cent.

For the seven months ending July 31 the report also shows a slight gain, one-tenth of one per cent in the number of revenue ton-miles as compared with the record made during the corresponding period of 1917, but the average ton mileage per freight locomotive and per freight car per month was less than in 1917. While the average trainload and the average carload were greater both in July and in the seven months' period than in the corresponding periods of 1917, the average mileage per car and per locomotive per day fell below the marks set last year. There was an increase in the percentage of empty car miles and the increased business was handled with a greater number of cars and locomotives in service than in 1917. For July the ton mileage per freight locomotive and per freight car increased 2.9 per cent and 0.3 per cent, respectively. The ton mileage per freight locomotive increased from 1,206,144 to 1,240,520 and per freight car from 15,974 to 16,025.

The press notice issued by the Railroad Administration, in commenting on the July figures, says: "The figures furnish abundant proof that the policy of the United States Railroad Administration in shortening routes and insisting upon the heavier loading and more intensive employment of the rolling stock and motive power is having the effect that had been expected in increasing the capacity of the railroads and reducing the cost of operation." But for the seven months' period since the Railroad Administration assumed control of the roads, the ton mileage per freight locomotive per month has been 1,118,000 as compared with 1,134,000 in seven months of 1917, and the ton mileage per freight car per month has been 14,463 as compared with 15,078.

Analysis of the figures would seem to indicate that while the Railroad Administration has succeeded in handling more traffic than was handled last year, which means more than was ever handled before in a similar period, the result was accomplished by the use of a greater amount of equipment than was available in 1917 and that while there was an increase in the efficiency of each unit of equipment in July as compared with July, 1917, the result for the seven months does not equal the record for 1917 in this respect.

The July figures reflect the beginning of the grain movement, which during the past three months has shown such a large increase and which has caused a large movement of empty cars westward. The increase in ton mileage was accomplished with an increase of 1.5 per cent in the average number of freight locomotives in service and of 4.3 per cent in the average number of freight cars in service. There were larger increases, however, in the number and percentage of cars and locomotives in shop or awaiting shop. The average tons per train increased from 684 in July, 1917, to 723 in July, 1918, and the tons per loaded car increased from 27.3 to 30.1. On the other hand the mileage per locomotive per day fell from 65.6 to 64.2 and the average mileage per car per day from 27.9 to 26.5. The percentage of empty car miles increased from 32.4 to 35.3.

The combined seven months' figures show a total increase of 304,142,000 in revenue ton miles of freight, or 0.1 per cent, accomplished with an increase of 1.3 per cent in the average number of freight locomotives in service and of 4.2 per cent in the average number of freight cars in service. Total train miles decreased 2.8 per cent, total car miles 4.9 per cent, and freight locomotive miles 2 per cent. The average trainload was increased from 644 tons to 661 tons, or 2.6 per cent, and the average car load from 26.5 tons to 28.6 tons, or 7.9 per cent, but the average mileage per locomotive per day declined from 67.1 to 64.9, or 3.3 per cent and the average mileage per car per day from 26.9 to 24.5, or 8.9 per cent.

The statistics made public give the July figures of freight train operation for the individual roads in one table, by regions and districts in another, and the grand totals in another. The seven months' figures are given only for all roads combined.

The largest increase in revenue ton-miles for July is shown by the New England district and the Southern region, 15.3 per cent in each case. All of the regions show increases except the Southwestern, which shows a decrease of 5.4 per cent. The greatest increase in ton mileage per locomotive is shown in the Southern region, 10.8 per cent, although the New England district shows an increase of 10.7 per cent. Only the Southwestern shows a decrease. In ton mileage per freight car the New England district shows the largest increase, 14.7 per cent. The Pocahontas, Southern Central Western and Southwestern regions show decreases in this item. The Central Eastern and Ohio-Indiana districts show the largest increase in train loading, 8.5 per cent in each case, while the New England district shows the largest increase in carloading, 14.5 per cent.

The combined figures for all regions, for July and the seven months ending July 31, are as follows:

| Item | Month of July 1918 | 1917 | Increase or Decrease Amount | Per Cent | Seven Months 1918 | 1917 | Increase or Decrease Amount | Per Cent |
|---|---|---|---|---|---|---|---|---|
| Average miles operated—single track | 220,697.13 | 220,178.91 | 518.22 | 0.2 | 226,636.15 | 226,355.70 | 280.45 | 0.1 |
| Freight train miles | 53,619,701 | 54,280,840 | 661,139 | 1.2 | 370,211,398 | 380,797,036 | 10,585,638 | 2.8 |
| Loaded freight car miles | 1,287,086,801 | 1,358,205,206 | 71,118,405 | 5.2 | 8,573,094,133 | 9,259,037,495 | 685,943,362 | 7.4 |
| Empty freight car miles | 700,721,826 | 649,491,450 | 51,230,376 | 7.9 | 4,005,970,291 | 3,967,924,862 | 38,045,429 | 1.0 |
| Total freight car miles—loaded and empty | 1,987,808,627 | 2,007,696,656 | 19,888,029 | 1.0 | 12,579,064,424 | 13,226,962,357 | 647,897,933 | 4.9 |
| Freight locomotive miles | 62,210,369 | 62,638,521 | 428,152 | 0.7 | 430,754,063 | 439,513,246 | 8,759,183 | 2.0 |
| Revenue ton miles | 35,979,290,961 | 34,081,914,750 | 1,897,376,211 | 5.6 | 224,830,996,874 | 224,526,854,693 | 304,142,181 | 0.1 |
| Non-revenue ton miles | 2,781,999,789 | 3,055,247,959 | 273,248,170 | 8.9 | 20,045,711,892 | 20,565,576,170 | 519,864,278 | 2.5 |
| Total ton miles | 38,761,290,750 | 37,137,162,709 | 1,624,128,041 | 4.4 | 244,876,708,766 | 245,092,430,863 | 215,722,097 | a |
| Average number of freight locomotives in service | 31,246 | 30,790 | 456 | 1.5 | 31,287 | 30,883 | 404 | 1.3 |
| Average number of freight locomotives in or awaiting shop | 4,414 | 4,234 | 180 | 4.3 | 4,651 | 4,467 | 184 | 4.1 |
| Average number of freight cars in service | 2,418,729 | 2,324,859 | 93,870 | 4.0 | 2,418,801 | 2,322,150 | 96,651 | 4.2 |
| Average number of freight cars in or awaiting shop | 167,153 | 139,835 | 27,318 | 19.5 | 131,816 | 130,283 | 1,533 | 1.2 |
| Home | 84,834 | 104,959 | 20,125 | 19.2 | 77,715 | 98,448 | 20,733 | 21.1 |
| Foreign | 82,319 | 34,876 | 47,443 | 136.0 | 54,101 | 31,835 | 22,266 | 69.9 |
| Tons per train | 723 | 684 | 39 | 5.7 | 661 | 644 | 17 | 2.6 |
| Tons per loaded car | 30.1 | 27.3 | 2.8 | 10.3 | 28.6 | 26.5 | 2.1 | 7.9 |
| Average miles per locomotive per day | 64.2 | 65.6 | 1.4 | 2.1 | 64.9 | 67.1 | 2.2 | 3.3 |
| Average miles per car per day | 26.5 | 27.9 | 1.4 | 5.0 | 24.5 | 26.9 | 2.4 | 8.9 |
| Per cent of empty car miles | 35.3 | 32.4 | 2.9 | 9.0 | 31.8 | 30.0 | 1.8 | 6.0 |
| Per cent of freight locomotives in or awaiting shop | 14.1 | 13.8 | 0.3 | 2.2 | 14.9 | 14.5 | 0.4 | 2.8 |
| Per cent of freight cars in or awaiting shop | 6.9 | 6.0 | 0.9 | 15.0 | 5.4 | 5.6 | 0.2 | 3.6 |
| Total ton miles: | | | | | | | | |
| Per freight locomotive per month | 1,240,520 | 1,206,144 | 34,376 | 2.9 | 1,118,112 | 1,133,737 | 15,625 | 1.4 |
| Per freight car per month | 16,025 | 15,974 | 51 | 0.3 | 14,463 | 15,078 | 615 | 4.1 |

*Unless You Buy Bonds to Your Utmost*

# Train Accidents in July[1]

THE FOLLOWING is a list of the most notable train accidents that occurred on the railways of the United States in the month of July, 1918:

*Collisions.*

| Date | Road | Place | Kind of accident | Kind of train | Kil'd | Inj'd |
|---|---|---|---|---|---|---|
| *†9. | Nash., C. & St. L. | Nashville | bc | P. & P. | 92 | 88 |
| †16. | Baltimore & Ohio | Georgetown Junc. | rc | P. & P. | 1 | 49 |
| 18. | Phila. & Reading | Allentown | xc | F. & F. | 1 | 2 |

*Derailments.*

| Date | Road | Place | Cause of derailment | Kind of train | Kil'd | Inj'd |
|---|---|---|---|---|---|---|
| 9. | Southern | Newport, Tenn. | unx | F. | 1 | 0 |
| 10. | Baltimore & Ohio | Rodamer | boiler | F. & F. | 3 | 0 |
| 11. | Vicksburg, S. & P. | Haughton | unx | P. | 0 | 6 |
| 13. | Atchison, T. & S. F. | Fierro, N. M. | runaway | F. | 0 | 1 |
| 15. | Wabash | Adrian, Mich. | beam | P. | 3 | 3 |
| 16. | Pennsylvania | L. I. City, N.Y. | neg | F. | 2 | 0 |
| 17. | Long Island | Central Park | unx | P. | 0 | 3 |
| 18. | St. Louis-San Fran. | Fickinger | unx | P. | 4 | 49 |

The trains in collision on the Nashville, Chattanooga & St. Louis, near Nashville, Tenn., on the ninth were westbound passenger No. 4 and eastbound passenger No. 1. Both trains were moving at full speed, and both engines and six cars were wrecked. Eighthy-eight passengers and four trainmen were killed and 86 passengers and two trainmen were injured. The westbound train had encroached on the time of the eastbound without right. The engineman and fireman of No. 4 were killed. The conductor of this train, who should have seen that his train did not pass from double track to single track until No. 1 had been met, entrusted the duty of watching out for the eastbound train to a porter and an inexperienced flagman. It appears that the switches at the end of double track were in position for train No. 4 to proceed westward. The signalman in the interlocking cabin at that point had just come on duty and knew nothing about the location of the different trains; and when No. 4 came in sight he set the switch and cleared the signal showing a clear road past the switch. After No. 4 had passed he reported its movement to the train despatcher and the despatcher told him that the train should have been held; the signalman then sounded his emergency whistle, but too late to halt the train. This accident was reported in the *Railway Age* of July 19, page 134.

The trains in collision at Georgetown Junction, Md., on the 16th, were eastbound express passenger No. 4 and eastbound local passenger No. 40, the express running into the rear of the local. About 50 passengers were injured; one of them fatally and all the others slightly. Train No. 40 was backing from a siding to the main track and appears to have been insufficiently protected by flag; and it is said also that No. 4 had run past a block signal set against it.

The trains in collision at Allentown, Pa., on the 18th, were an eastbound through freight train of about 100 cars, and a train of passenger cars from which passengers had just been discharged. Two locomotives and 30 loaded freight cars were wrecked. One brakeman on the passenger train jumped off and was killed and two other employees were injured. The collision was due to the freight train becoming uncontrollable on a steep descending grade. It appears that after cutting out a car the angle cocks had been left closed so that the engineman had control of the brakes on only a small part of the train.

The train derailed near Newport, Tenn., on the ninth, was a through freight. The locomotive was derailed at a curve by striking a pile of bolts, and was ditched. The engineman was fatally injured.

[1] Abbreviations and marks used in Accident List:
rc, Rear collision——bc, Butting collision——xc, Other collisions——b, Broken——d, Defective——unf, Unforeseen obstruction——unx, Unexplained——derail, Open derailing switch——ms, Misplaced switch——acc. obst., Accidental obstruction——malice, Malicious obstruction of track, etc. ——boiler, Explosion of locomotive on road——fire, Cars burned while running——P. or Pass., Passenger train——F. or Ft., Freight train (including empty engines, work trains, etc.)——Asterisk, Wreck wholly or partly destroyed by fire——Dagger, One or more passenger killed.

The trains involved in the accident at Rodamer, Md., on the 10th were a westbound freight hauled by engine 7124, and another freight which was passing on another track. Engine 7124 exploded and its boiler was thrown some distance up the mountainside and then fell back to the track; the car next behind the engine was derailed and set afire and four cars of the other train were knocked off the track. The engineman, fireman and one brakeman were killed. Locomotive 7124 was a Mallet—2-8-8-0 type weighing about 485,000 lb. Its boiler was 8 ft. in diameter. The explosion is attributed to low water.

The train derailed near Houghton, La., on the 11th was a westbound special, carrying troops. Four cars were overturned and ditched, and six soldiers were injured.

The train derailed near Fierro, N. M., on the 13th was a southbound freight. This train consisted of 28 cars loaded with ore and it became uncontrollable on a steep descending grade; and was thrown off the track at a curve. One brakeman was injured, and 20 cars were wrecked.

The train derailed near Adrian, Mich., on the 15th was eastbound passenger No. 28. Two coaches were overturned and fell down a bank. Three employees were killed and three passengers were injured. The derailment was due to a fallen brake beam.

The train derailed on the Pennsylvania Railroad at Long Island City, N. Y., on the 16th consisted of a Long Island Railroad locomotive and a number of empty passenger cars. The engine was overturned at a derailing switch. The fireman was killed and the engineman was fatally injured.

The train derailed at Central Park, L. I., N. Y., on the 17th was a westbound express. Two cars of the train left the rails at a temporary end of double track, where by special order, speed limit is 15 miles an hour. These cars ran against a special passenger train standing on the eastbound track. The locomotive of the standing train was slightly damaged, and three of the passengers on the express were slightly injured.

The train derailed near Fickinger, Ark., on the 18th was southbound passenger No. 105. The engine and four cars were ditched and a mail car fell into the Spring river. The engineman and fireman and two passengers were killed and 42 passengers and seven trainmen were injured. The cause of the derailment was not determined.

*Canada*—The newspapers report three serious accidents to passenger trains on the Canadian Pacific in July, in one of which, a derailment near Lens, Ont., on the eleventh, the locomotive and nine coaches are said to have fallen down a bank; but the engineman and the conductor are the only persons who were reported injured.

*Electric Car Accidents*—Of six accidents to electric cars reported in the United States in the month of July, three were reported as fatal; a butting collision near Alliance, Ohio, on the fourth, in which one person was killed and 11 were injured; a derailment at a curve in San Francisco on the thirteenth, seven persons killed and 41 injured; and a butting collision near Chelsea, Mich., on the evening of the twentieth, in which 18 persons were killed. In this case a westbound freight car and an eastbound limited passenger car collided at full speed and 17 passengers and one employee were killed and about 40 passengers were injured. Both cars were wrecked and many of the injured persons were extricated with difficulty.

---

**$5,300,000 in Two Days.**—Twenty-two per cent of the employees of the Central Western Region had subscribed to the Liberty Loan up to September 30, total subscriptions amounting to approximately $5,300,000. One hundred per cent of the employees and officers of the Iowa Transfer and the Missouri & Illinois Bridge & Belt have subscribed.

# General News Department

**Goggles for workmen** and prevention of accidents in the use of freight elevators are the subjects of the latest "Safe Practices" pamphlets issued by the National Safety Council, 208 South Lasalle street, Chicago; No. 14, of eight pages, dealing with goggles, and No. 15, of 12 pages, with elevators.

**Dining car employees**—stewards, cooks and waiters—to the number of 32, were arrested on Saturday night, September 28, by inspectors of the New York, New Haven & Hartford, and taken before court on charges of fraud in issuing meal checks on which the money was not turned over to the company. Thirteen men were taken at Boston, 14 at New Haven, and five at New York.

**Prices of steel rails,** the fixing of which by the government has been the subject of conferences for several weeks, were again discussed on Tuesday of this week by Director General McAdoo with R. S. Lovett, director of the division of capital expenditures, and W. B. Colver, chairman of the Federal Trade Commission. It is understood that a general agreement has been reached between the representatives of the steel companies and the War Industries Board, but that the Railroad Administration has not yet been satisfied.

## Car Conservation on Southern Pacific

As the result of efficient loading during the seven months ended July 31, a reduction of 50,055 was made in the number of cars which would otherwise have been required to accommodate freight loaded at the various stations on the Southern Pacific—Pacific System (excluding narrow gage lines). During July the total number of tons loaded was 1,609,477, and the average tons per car for all cars loaded was 24.3 compared with 23.9 last year. The greatest increase in car loading was made on the Salt Lake division, 17 per cent. The Coast division showed 12 per cent. The San Francisco freight station increased its average loading of l. c. l. merchandise from 10 tons per car in July, 1917, to 15.9 tons in July, 1918, or an increase of over 50 per cent.

## No Fault with Transportation

J. L. Replogle, United States Steel Administrator, says that at the recent conference which he held with pig-iron, pipe, shell steel and plate manufacturers, to discuss factors that were reducing output, not one complaint was heard of lack of railroad facilities. "There were at least 600 men altogether at the different conferences, and not one had any fault to find with transportation. They all agreed that it is adequate to all needs. When you consider that supplying the needs of the steel industry, including movement of ore, coal and coke and the other factors entering into production, as well as the movement of the product from the mills, means transportation at the rate of well up towards a billion tons a year, the record established by the Railroad Administration in providing all facilities demanded is nothing short of phenomenal. I do not believe that a similar situation has existed within the past ten years."—*Wall Street Journal.*

## The New Safety Organization on Southern Pacific-Western Pacific

Safety committees on the Southern Pacific, the Western Pacific, the Tidewater Southern and the Deep Creek have been reorganized by J. H. Dyer, general manager, in accordance with instructions from the director general. The plan of organization calls for 33 safety committees: One general committee composed of general officers at San Francisco, Cal., 12 divisional, four general shop, three local shop, six terminal, five local and one marine committee. Nine of the 12 divisional committees will be on the nine operating divisions of the Southern Pacific, two on the Western Pacific and one on the Tidewater Southern.

R. J. Clancy, assistant to the general manager, has been placed in general charge of all committees. In commenting on the safety record of the Southern Pacific during the past 10 years, Mr. Clancy stated that 425,000,000 revenue passengers have been carried 18,000,000,000 passenger miles with a degree of safety equivalent to carrying a passenger a distance equal to 640,000 times around the world without danger of loss of life in train accidents. This, he believes, is the greatest record ever made by any railroad and it is the purpose of the new organization to maintain it.

## New York to San Francisco, 3175 Miles

The people of Keokuk, Iowa, have a plan for a short transcontinental railway route, to pass through their city, and they have petitioned the director general of railroads to order it established. The proposed line is by way of Pittsburgh, Pa.; Logansport, Ind.; Effner, Ind.; Hamilton, Ill.; Keokuk, Iowa; Shenandoah, Iowa; Nebraska City, Lincoln, Neb.; Ogden and Sacramento. Some of the lines between Logansport and Lincoln now carry but very little traffic, but the promoters of the new route say that the tracks are in fairly good condition. The agitation for this route originated in a meeting held in Keokuk on July 29, attended by manufacturers, stockmen and farmers, at the conclusion of which Judge Felix T. Hughes was delegated to present the matter to the director general. The distance from New York to San Francisco by the route indicated is about 3,175 miles as follows:

| | | Miles |
|---|---|---|
| New York to Pittsburgh | Pennsylvania | 440 |
| Pittsburgh to Columbus | Pennsylvania | 191 |
| Columbus to Logansport | Pennsylvania | 198 |
| Logansport to Effner, Ind | Pennsylvania | 61 |
| Effner to Hamilton, Ill | Toledo, Peoria & W | 223 |
| Hamilton to Keokuk, Iowa | Bridge | 1 |
| Keokuk to Shenandoah | Chicago, B. & Quincy | 244 |
| Shenandoah to Nebraska City | Chicago, B. & Quincy | 33 |
| Nebraska City to Lincoln, Neb | Chicago, B. & Quincy | 58 |
| Lincoln to Grand Island | Chicago, B. & Quincy | 97 |
| Grand Island to San Francisco | Union Pacific and So. Pac | 1,629 |
| Total | | 3,175 |

## Railway Equipment Manufacturers' Association

At the annual meeting of the Railway Equipment Manufacturers' Association, which was held during the Traveling Engineers' Convention, $100 was contributed to the Railway Regiments' Tobacco Fund and $200 to the American Red Cross. During the first day of the convention of the Traveling Engineers' Association, W. E. Brumble, president of the Railway Equipment Manufacturers' Association, presented the Traveling Engineers' Association with a service flag having 20 stars. This flag bears one gold star for Lieut. J. Boyden Russell, who was killed in an aerial bombing expedition on the Italian front.

The following officers were elected for the ensuing year: President, Gilbert E. Ryder, Locomotive Superheater Company; vice-president, C. W. Floyd Coffin, Franklin Railway Supply Company; secretary, D. L. Eubank, Galena Signal Oil Company; treasurer, B. C. Hooper, American Steel Foundries; executive committee members for three years, C. L. Brown, Manning, Maxwell & Moore; Morris Brewster, United States Metallic Packing Company, and F. W. Venton, Crane Company.

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY, 1918

| Name of road. | Average mileage operated during period. | Operating revenues: Freight. | Passenger. | Total (inc. misc.) | Operating expenses: Maintenance of Way and structures. | Maintenance of Equipment. | Traffic. | Transportation. | General. | Total. | Operating ratio. | Net from railway operation. | Railway tax accruals. | Operating income (or loss). | Increase (or decr.) comp. with last year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Colorado Midland | 337 | $109,203 | $14,223 | $127,930 | $23,711 | $27,800 | $2,391 | $62,400 | $4,995 | $121,929 | 95.31 | $6,001 | $6,864 | —$863 | —$760 |
| Northwestern Pacific | 507 | 316,039 | 275,266 | 649,844 | 58,476 | 52,978 | 5,317 | 206,090 | 9,526 | 334,660 | 51.49 | 315,184 | 22,129 | 293,053 | 74,924 |
| Oregon, Washington & Navigation Co. | 2,065 | 1,616,825 | 542,742 | 2,330,270 | 296,691 | 255,530 | 27,015 | 883,457 | 81,819 | 1,584,663 | 68.00 | 745,607 | 121,010 | 624,549 | 128,374 |
| Panhandle & Santa Fe | 772 | 315,516 | 158,116 | 498,841 | 95,436 | 103,256 | 3,453 | 157,264 | 13,134 | 372,256 | 74.62 | 126,584 | 18,638 | 107,809 | 158,645 |
| Philadelphia Reading | 1,126 | 7,573,746 | 760,119 | 8,836,862 | 545,609 | 1,390,225 | 30,619 | 3,053,430 | 102,949 | 5,138,757 | 58.15 | 3,698,105 | 102,250 | 3,595,855 | 1,935,419 |
| Pittsburgh, Shawmut & Northern | 204 | 112,989 | 5,204 | 120,788 | 39,227 | 81,762 | 1,672 | 69,655 | 6,707 | 199,024 | 164.77 | —78,236 | 1,833 | —80,068 | —60,908 |
| Port Reading | 21 | 185,948 | ..... | 255,032 | 18,662 | 9,699 | 40 | 120,679 | 1,392 | 150,471 | 59.00 | 104,561 | 7,667 | 96,895 | 41,601 |
| Richmond, Fredericksburg & Pot. | 87 | 272,671 | 239,240 | 573,302 | 25,976 | 69,064 | 3,787 | 204,555 | 10,119 | 319,825 | 55.28 | 253,477 | 13,211 | 240,196 | 94,830 |
| St. Joseph & Grand Island | 258 | 184,878 | 33,603 | 235,177 | 29,946 | 48,335 | 1,845 | 104,721 | 8,466 | 194,738 | 82.80 | 40,438 | 8,607 | 31,832 | 31,878 |
| St. Louis, Brownsville & Mexico | 548 | 207,304 | 116,291 | 343,166 | 54,925 | 72,017 | 4,896 | 95,313 | 11,441 | 238,591 | 69.50 | 104,575 | 9,944 | 94,511 | 38,755 |
| St. Louis Merchants Bridge Terminal | 9 | ..... | 440 | 334,076 | 40,799 | 44,696 | 866 | 179,264 | 8,093 | 273,719 | 81.93 | 60,357 | 8,159 | 52,183 | —3,772 |
| St. Louis, San Francisco & Texas | 134 | 90,390 | 17,888 | 112,183 | 17,722 | 4,276 | 1,875 | 65,181 | 6,174 | 95,228 | 84.88 | 16,955 | 1,648 | 15,307 | —2,099 |
| St. Louis Southwestern of Texas | 814 | 387,145 | 285,843 | 687,546 | 171,082 | 141,364 | 10,411 | 243,053 | 22,715 | 588,751 | 85.63 | 98,795 | 19,506 | 79,275 | 45,983 |
| San Antonio & Aransas Pass | 732 | 208,271 | 124,553 | 353,150 | 59,447 | 102,239 | 5,355 | 158,690 | 15,390 | 341,079 | 96.58 | 12,071 | 15,000 | —2,928 | —25,335 |
| South Buffalo | 35 | 50,685 | ..... | 139,684 | 22,376 | 15,040 | 260 | 67,893 | 1,410 | 106,978 | 76.58 | 32,705 | 1,400 | 31,305 | 21,530 |
| Southern in Mississippi | 278 | 59,326 | 39,122 | 107,460 | 31,284 | 12,794 | 2,616 | 58,975 | 4,661 | 110,329 | 102.66 | —2,869 | 9,000 | —11,869 | —21,886 |
| Southern Pacific | 7,102 | 9,094,387 | 3,606,389 | 14,064,272 | 1,489,495 | 2,104,167 | 116,836 | 4,892,730 | 243,150 | 9,109,824 | 64.77 | 4,954,448 | 539,025 | 4,405,520 | 197,046 |
| Spokane Int. | 165 | 79,314 | 12,813 | 95,870 | 13,629 | 8,086 | 1,257 | 27,935 | 3,963 | 54,866 | 57.23 | 41,003 | 3,305 | 37,695 | 12,440 |
| Spokane, Portland & Seattle | 554 | 491,202 | 202,754 | 738,963 | 86,636 | 64,547 | 5,095 | 214,187 | 18,237 | 393,945 | 53.31 | 345,018 | 77,700 | 267,314 | —26,987 |
| Staten Island Rapid Transit | 23 | 84,285 | 105,587 | 216,965 | 35,293 | 24,424 | 1,807 | 125,322 | 6,942 | 193,789 | 89.31 | 23,176 | 14,000 | 9,172 | —45,736 |
| Tennessee Central | 293 | 174,107 | 118,285 | 304,116 | 69,535 | 49,061 | 1,027 | 95,710 | 4,862 | 220,194 | 72.40 | 83,923 | 5,448 | 78,475 | 57,310 |
| Texas & Pacific | 1,946 | 1,418,679 | 728,773 | 2,266,304 | 293,871 | 344,162 | 19,727 | 858,419 | 56,628 | 1,586,939 | 70.02 | 679,365 | 86,950 | 590,922 | 223,035 |
| Uister & Delaware | 128 | 85,386 | 29,815 | 136,246 | 14,767 | 13,652 | 1,270 | 66,597 | 5,472 | 102,093 | 74.93 | 34,153 | 4,600 | 29,553 | —30,979 |
| Union R. R. of Pennsylvania | 35 | ..... | ..... | 781,800 | 21,346 | 139,369 | 98 | 298,080 | 3,239 | 462,124 | 59.11 | 319,677 | 14,736 | 304,934 | 253,590 |
| Utah Railway | 98 | 127,445 | 695 | 129,024 | 11,205 | 15,249 | 151 | 23,132 | 6,062 | 55,799 | 43.24 | 73,225 | 7,290 | 65,934 | ..... |
| Vicks., Shreve. & Pac. | 171 | 124,799 | 71,121 | 225,675 | 27,452 | 49,464 | 4,067 | 81,691 | 6,998 | 174,376 | 77.26 | 51,298 | 9,417 | 41,881 | 6,404 |
| Western Pacific | 1,022 | 853,650 | 143,712 | 1,042,517 | 162,415 | 119,527 | 17,056 | 279,704 | 24,352 | 617,242 | 59.20 | 425,276 | 40,209 | 385,013 | 129,288 |
| Yazoo & Mississippi Valley | 1,382 | 1,484,714 | 353,520 | 1,914,784 | 114,070 | 350,983 | 15,971 | 679,111 | 45,060 | 1,183,417 | 61.77 | 731,367 | 64,029 | 667,199 | 331,815 |

SEVEN MONTHS OF CALENDAR YEAR 1918

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ala. & Vicks. | 141 | $824,845 | $334,937 | $1,304,983 | $133,151 | $271,550 | $35,891 | $566,979 | $52,925 | $1,071,470 | 82.11 | $233,513 | $78,103 | $155,224 | —64,554 |
| Ann Arbor | 293 | 1,424,794 | 291,152 | 1,845,725 | 309,899 | 361,768 | 35,611 | 940,772 | 67,154 | 1,719,652 | 93.16 | 126,072 | 91,700 | 34,331 | —30,195 |
| Atlanta, Birmingham & Atlantic | 639 | 1,822,926 | 427,441 | 2,423,308 | 547,813 | 560,765 | 70,927 | 1,291,337 | 92,878 | 2,564,124 | 105.82 | —140,816 | 109,900 | —251,228 | —513,451 |
| Atlantic City | 170 | 831,583 | 1,032,201 | 1,978,178 | 214,512 | 279,390 | 9,605 | 1,065,015 | 9,405 | 1,578,473 | 79.79 | 399,705 | 79,800 | 319,906 | 34,219 |
| Baltimore & Ohio Chicago Terminal | 91 | ..... | 3,479 | 1,011,222 | 176,746 | 298,151 | 8,130 | 879,188 | 65,506 | 1,441,577 | 142.55 | —430,355 | 200,155 | —630,623 | 469,641 |
| Baltimore, Chesapeake & Atlantic | 87 | 417,190 | 216,466 | 659,080 | 63,266 | 159,708 | 9,152 | 424,144 | 19,996 | 676,266 | 102.60 | —17,186 | 19,063 | —36,249 | 77,670 |
| Bangor & Aroostook | 632 | 2,039,204 | 441,572 | 2,607,201 | 462,486 | 588,069 | 28,887 | 1,102,802 | 88,361 | 2,299,937 | 88.21 | 307,264 | 124,145 | 182,992 | —581,506 |
| Beaumont Sour Lake | 118 | 583,907 | 214,310 | 827,017 | 110,872 | 105,652 | 13,644 | 284,543 | 31,358 | 546,369 | 66.07 | 280,647 | 15,050 | 265,544 | 990,605 |
| Bingham & Garfield | 36 | 1,882,437 | 27,555 | 1,958,762 | 268,225 | 313,915 | 8,951 | 382,142 | 34,118 | 1,030,586 | 52.61 | 928,176 | 66,956 | 861,220 | —164,512 |
| Birmingham Southern | 44 | 751,946 | 9,268 | 921,097 | 88,673 | 219,258 | 6,752 | 422,553 | 28,367 | 765,603 | 83.12 | 155,494 | 31,228 | 124,266 | 114,187 |
| Canadian Pacific Lines in Maine | 233 | 1,177,592 | 161,025 | 1,447,085 | 305,990 | 307,177 | 19,248 | 956,078 | 18,346 | 1,606,839 | 111.03 | —159,754 | 66,500 | —226,254 | —582,760 |
| Central of New Jersey | 684 | 17,625,575 | 4,195,192 | 23,928,464 | 2,006,709 | 5,284,915 | 193,837 | 11,493,136 | 532,660 | 19,643,527 | 82.09 | 4,284,936 | 1,281,243 | 2,998,959 | —2,472,347 |
| Chicago & Eastern Illinois | 1,131 | 10,705,317 | 2,062,276 | 13,850,186 | 1,812,220 | 4,150,740 | 166,943 | 5,976,948 | 389,776 | 12,545,066 | 90.58 | 1,305,120 | 542,390 | 759,507 | —1,337,095 |
| Chicago, Detroit & Canadian Grand Trunk | 60 | 547,296 | 64,159 | 800,805 | 79,747 | 171,662 | 9,086 | 481,047 | 14,993 | 756,533 | 94.47 | 44,272 | 23,415 | 20,725 | —59,006 |
| Chicago, Peoria & St. Louis | 247 | 1,022,079 | 143,799 | 1,234,512 | 182,718 | 369,761 | 32,006 | 714,170 | 50,434 | 1,349,089 | 109.28 | —114,577 | 53,803 | —168,380 | —318,067 |
| Cincinnati, Indianapolis & Western | 321 | 1,246,780 | 307,927 | 1,716,206 | 246,921 | 432,435 | 48,911 | 874,424 | 76,867 | 1,681,718 | 97.99 | 34,488 | 70,142 | —35,735 | —313,531 |
| Colorado Midland | 337 | 779,971 | 99,481 | 920,402 | 230,422 | 200,951 | 36,380 | 559,897 | 32,936 | 1,065,067 | 115.71 | —144,644 | 48,048 | —192,713 | —189,846 |
| Colorado Wyoming | 42 | 203,776 | 17,191 | 634,232 | 60,912 | 111,170 | 986 | 269,778 | 30,221 | 413,075 | 74.58 | 161,159 | 25,445 | 135,705 | —125,137 |
| Cripple Creek & Colorado Springs | 116 | 462,294 | 70,872 | 546,699 | 38,647 | 72,292 | 6,658 | 185,752 | 21,441 | 324,790 | 59.41 | 221,909 | 50,784 | 171,124 | —125,551 |
| Detroit Mack. | 381 | 632,255 | 173,821 | 856,981 | 144,923 | 193,314 | 15,681 | 394,490 | 37,602 | 786,011 | 91.71 | 70,970 | 61,279 | 8,110 | —104,559 |
| Det., Tol. & Ironton | 463 | 1,405,078 | 73,097 | 1,586,334 | 334,606 | 526,739 | 30,863 | 993,733 | 86,602 | 1,972,543 | 124.35 | —386,210 | 62,300 | —448,659 | —620,644 |
| Detroit, Toledo & Shore Line | 80 | 1,095,234 | ..... | 1,102,537 | 71,081 | 116,371 | 13,205 | 400,005 | 27,138 | 627,800 | 56.94 | 474,737 | 75,862 | 398,875 | —135,130 |
| Detroit, Grand Haven & Milwaukee | 190 | 1,262,000 | 242,000 | 1,759,411 | 233,682 | 370,280 | 30,414 | 1,227,239 | 56,650 | 1,918,266 | 109.02 | —158,855 | 24,108 | —183,374 | —275,201 |
| Duluth & Iron Range | 284 | 4,266,538 | 133,264 | 4,499,386 | 727,422 | 574,097 | 5,981 | 1,209,932 | 92,953 | 2,616,022 | 58.14 | 1,883,363 | 268,795 | 1,614,250 | 813,863 |
| Duluth, South Shore & Atlantic | 601 | 1,813,407 | 568,797 | 2,539,734 | 571,932 | 381,274 | 52,973 | 1,316,346 | 66,989 | 2,418,553 | 95.22 | 121,181 | 142,271 | —21,106 | —392,662 |
| Duluth, Winnipeg & Pacific | 175 | 785,304 | 163,711 | 977,034 | 149,025 | 163,593 | 18,904 | 507,203 | 40,242 | 881,536 | 90.22 | 95,497 | 53,722 | 41,775 | —278,139 |
| East St. Louis Connecting | 3 | ..... | ..... | 590,488 | 80,147 | 96,987 | 2,152 | 493,114 | 30,296 | 702,696 | 119.00 | —112,207 | 15,461 | —127,671 | —253,736 |
| Elgin, Joliet & Eastern | 805 | 8,685,256 | 99 | 10,159,607 | 1,129,457 | 2,285,024 | 49,360 | 4,063,353 | 177,315 | 7,702,466 | 75.81 | 2,457,142 | 355,410 | 2,101,729 | —61,298 |
| Fort Smith & Western | 253 | 475,302 | 161,909 | 695,882 | 119,815 | 186,328 | 20,074 | 265,748 | 39,515 | 635,534 | 91.61 | 60,348 | 33,000 | 27,344 | 12,221 |
| Fort Worth & Rio Grande | 235 | 354,650 | 212,979 | 614,563 | 119,253 | 111,936 | 13,033 | 287,646 | 33,589 | 565,457 | 92.01 | 49,107 | 21,193 | 27,315 | 20,407 |
| Galv. Wharf | 13 | ..... | ..... | 665,907 | 6,750 | 7,407 | 2,832 | 202,028 | 4,250 | 377,012 | 56.62 | 288,895 | 86,100 | 202,795 | —14,582 |
| Georgia Southern & Florida | 402 | 1,173,030 | 609,528 | 1,974,823 | 277,263 | 442,087 | 36,922 | 864,202 | 72,591 | 1,702,241 | 86.19 | 272,582 | 95,670 | 176,260 | —16,642 |
| Grand Rapids & Indianapolis | 569 | 2,623,053 | 914,210 | 3,662,490 | 546,092 | 855,066 | 70,819 | 1,854,747 | 138,164 | 3,469,552 | 89.82 | 392,937 | 161,182 | 230,921 | —195,830 |
| Grand Trunk Western | 347 | 4,653,000 | 901,000 | 5,332,557 | 787,694 | 1,687,935 | 129,797 | 2,973,751 | 167,797 | 5,783,202 | 108.45 | —149,355 | 263,543 | —117,114 | —1,086,298 |
| Gulf & Ship Island | 307 | 1,024,535 | 351,589 | 1,489,821 | 267,008 | 248,169 | 27,658 | 493,456 | 73,690 | 1,110,413 | 74.53 | 379,408 | 73,474 | 305,433 | —3,418 |
| Gulf, Mobile & Northern | 402 | 1,035,626 | 217,284 | 1,318,563 | 192,391 | 265,419 | 533,383 | 526,343 | 65,865 | 1,083,677 | 82.18 | 234,887 | 80,080 | 154,796 | —166,624 |

Has Your Shop Subscribed 100 Per Cent

## REVENUES AND EXPENSES OF RAILWAYS

SEVEN MONTHS OF CALENDAR YEAR 1918—CONTINUED

| Name of road. | Average mileage operated during period. | Operating revenues: Freight. | Passenger. | Total (inc. misc.) | Operating expenses: Maintenance of Way and structures. | Maintenance of Equipment. | Traffic. | Transportation. | General. | Total. | Operating ratio. | Net from railway operation. | Railway tax accruals. | Operating income (or loss). | Increase (or decr.) comp. with last year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Houston East & West Texas | 190 | $780,797 | $270,345 | $1,114,754 | $170,261 | $112,612 | $13,803 | $503,582 | $24,223 | $824,387 | 73.95 | $290,367 | $45,056 | $245,017 | —$113,026 |
| Illinois Central | 4,775 | 43,208,852 | 10,941,699 | 58,175,232 | 9,087,616 | 13,222,830 | 534,956 | 24,441,502 | 491,858 | 49,135,176 | 84.46 | 9,040,056 | 2,953,498 | 6,075,275 | —5,342,585 |
| Ind. Harbor Belt | 116 | ..... | ..... | 2,996,581 | 678,052 | 629,666 | 13,963 | 1,948,074 | 87,869 | 3,357,624 | 112.04 | —361,043 | 72,195 | —433,240 | —1,128,041 |
| Kanawha & Michigan | 176 | 2,359,100 | 560,026 | 3,014,378 | 338,098 | 725,292 | 20,168 | 967,048 | 67,429 | 2,118,040 | 70.26 | 896,338 | 138,562 | 757,776 | 329,280 |
| Kansas City, Mexico & Orient | 272 | 561,852 | 89,952 | 686,494 | 137,849 | 279,629 | 31,011 | 386,907 | 52,919 | 888,314 | 129.39 | —201,820 | 43,870 | —245,691 | —173,525 |
| Kansas City Southern | 774 | 6,475,161 | 1,246,049 | 8,334,874 | 858,138 | 1,389,819 | 140,702 | 3,192,765 | 281,182 | 5,858,651 | 70.29 | 2,476,224 | 398,902 | 2,075,818 | —220,357 |
| Kan. City Term. | 24 | ..... | ..... | 575,883 | 68,057 | 103,917 | ..... | 279,744 | 7,135 | 460,665 | 79.99 | 115,218 | 114,002 | 1,216 | —89,877 |
| Lehigh & Hudson River | 96 | 1,203,155 | 24,589 | 1,284,289 | 174,304 | 212,693 | 11,619 | 620,395 | 37,918 | 1,056,930 | 82.29 | 227,359 | 41,600 | 185,740 | —215,351 |
| Lehigh & New England | 296 | 2,085,329 | 9,824 | 2,223,778 | 295,732 | 418,742 | 44,717 | 773,166 | 58,226 | 1,590,383 | 71.52 | 633,394 | 61,016 | 572,378 | —123,363 |
| Louisiana Railway & Navigation Co. | 356 | 1,167,089 | 410,585 | 1,667,681 | 254,887 | 239,357 | 33,620 | 722,167 | 55,157 | 1,305,188 | 78.26 | 362,493 | 98,000 | 264,250 | 66,958 |
| Louisiana Western | 207 | 1,585,835 | 691,735 | 2,412,200 | 199,681 | 275,146 | 45,462 | 635,972 | 69,272 | 1,214,319 | 50.34 | 1,170,881 | 93,581 | 1,076,493 | 241,778 |
| Midland Valley | 386 | 1,419,189 | 397,014 | 1,891,395 | 265,201 | 276,257 | 18,871 | 676,167 | 76,209 | 1,312,705 | 69.40 | 578,690 | 50,054 | 528,546 | 142,308 |
| Mineral Range | 100 | 600,695 | 15,881 | 636,131 | 125,833 | 129,803 | 3,140 | 346,453 | 8,438 | 613,666 | 96.46 | 22,465 | 23,669 | —1,204 | 24,562 |
| Minneapolis & St. Louis | 1,646 | 4,841,614 | 1,157,590 | 6,354,275 | 1,169,087 | 1,370,773 | 104,380 | 3,229,418 | 185,292 | 6,051,408 | 95.23 | 296,867 | 348,132 | —54,206 | —1,450,562 |
| Minn. & Intern. | 195 | 444,831 | 163,044 | 644,243 | 114,213 | 104,066 | 3,219 | 319,410 | 23,754 | 564,661 | 87.64 | 79,583 | 40,947 | 38,602 | —159,555 |
| Minn., St. Paul & Sault Ste. Marie | 4,243 | 11,884,979 | 3,467,432 | 16,781,588 | 2,883,062 | 3,352,755 | 234,797 | 8,524,726 | 509,269 | 15,578,175 | 92.82 | 1,203,412 | 1,272,625 | —69,232 | —5,376,298 |
| Missouri Pacific | 7,301 | 33,259,349 | 10,776,262 | 47,826,454 | 7,796,697 | 9,402,670 | 719,789 | 19,767,271 | 1,208,822 | 39,082,405 | 81.71 | 8,744,049 | 1,964,957 | 6,769,288 | ..... |
| Mobile & Ohio | 1,159 | 6,514,096 | 1,062,054 | 8,038,855 | 1,047,657 | 2,253,601 | 240,841 | 3,827,418 | 247,584 | 7,617,225 | 94.75 | 421,630 | 327,420 | 92,199 | —1,658,637 |
| Monongahela | 108 | 1,465,682 | 132,653 | 1,648,246 | 380,511 | 135,050 | 9,838 | 592,524 | 34,168 | 1,152,091 | 69.89 | 496,155 | 26,316 | 469,836 | —26,988 |
| Monongahela Connecting | 5 | ..... | ..... | 1,302,331 | 178,471 | 209,017 | 2,835 | 715,309 | 37,663 | 1,143,294 | 87.78 | 159,037 | 16,392 | 142,645 | 15,178 |
| Nevada Northern | 168 | 1,287,066 | 107,026 | 1,429,331 | 145,353 | 185,888 | 5,615 | 347,342 | 36,493 | 721,556 | 50.48 | 707,775 | 109,397 | 597,767 | —142,332 |
| New Burgh & South Shore | 701 | ..... | —246 | 674,991 | 88,964 | 145,391 | ..... | 347,656 | 19,441 | 601,453 | 89.10 | 73,539 | 42,704 | 30,834 | 75,400 |
| New Orleans & Northeastern | 203 | 2,285,971 | 812,458 | 3,457,683 | 364,751 | 663,933 | 60,614 | 1,419,987 | 82,703 | 2,610,565 | 75.50 | 847,117 | 200,972 | 645,628 | —74,546 |
| New Orleans, Texas & Mexico | 191 | 851,385 | 288,441 | 1,167,346 | 200,778 | 214,443 | 22,344 | 362,441 | 46,982 | 846,576 | 72.52 | 320,767 | 21,380 | 299,902 | —679,936 |
| New York, Ontario & Western | 567 | 4,183,428 | 1,079,139 | 6,090,513 | 760,651 | 1,292,745 | 63,162 | 3,028,558 | 152,674 | 5,297,791 | 86.98 | 792,721 | 152,250 | 640,253 | 70,376 |
| New York, Philadelphia & Norfolk | 121 | 2,874,599 | 642,081 | 3,855,864 | 337,958 | 795,050 | 73,692 | 1,860,672 | 79,205 | 3,238,672 | 83.99 | 617,192 | 103,843 | 513,332 | —578,697 |
| New York, Susquehanna & Western | 135 | 1,656,723 | 336,716 | 2,193,416 | 262,678 | 377,770 | 15,973 | 1,737,573 | 51,557 | 2,109,571 | 96.16 | 87,077 | 107,717 | —20,473 | —203,219 |
| Norfolk Southern | 907 | 2,170,257 | 791,074 | 3,144,887 | 534,187 | 583,298 | 49,415 | 1,479,012 | 141,167 | 2,787,773 | 88.64 | 357,114 | 110,741 | 246,287 | —423,169 |
| Northwestern Pacific | 507 | 1,509,577 | 1,221,105 | 3,050,059 | 448,265 | 348,011 | 33,175 | 1,164,407 | 73,073 | 2,077,026 | 68.10 | 973,033 | 152,748 | 820,255 | —679,936 |
| Oregon-Washington & Navigation Co. | 2,065 | 9,019,861 | 3,606,956 | 13,959,018 | 2,165,381 | 1,749,901 | 240,593 | 5,585,628 | 580,427 | 10,594,260 | 75.89 | 3,364,758 | 864,282 | 2,499,566 | 114,788 |
| Panhandle & Santa Fe | 718 | 2,408,724 | 775,344 | 3,350,495 | 581,713 | 754,443 | 31,051 | 1,238,632 | 105,201 | 2,692,979 | 80.37 | 651,516 | 124,468 | 532,126 | —970,480 |
| Philadelphia Reading | 1,127 | 36,885,944 | 4,601,074 | 44,409,406 | 3,858,657 | 9,621,808 | 308,026 | 21,361,776 | 718,435 | 36,025,101 | 81.12 | 8,381,306 | 724,590 | 7,659,553 | —865,143 |
| Pittsburgh, Shawmut & Northern | 204 | 726,807 | 36,977 | 782,079 | 205,305 | 350,246 | 8,884 | 462,962 | 51,105 | 1,078,502 | 137.90 | —296,422 | 12,733 | —309,155 | —3,647,069 |
| Port Reading | 21 | 949,767 | ..... | 1,301,753 | 152,150 | 96,245 | 280 | 738,243 | 7,346 | 994,260 | 76.37 | 307,492 | 67,667 | 239,825 | —185,341 |
| Richmond, Fredericksburg & Pot. | 87 | 1,435,327 | 1,628,457 | 3,418,187 | 186,866 | 406,411 | 29,577 | 1,332,939 | 70,115 | 2,060,965 | 60.29 | 1,357,222 | 93,940 | 1,262,935 | —15,828 |
| St. Joseph & Grand Island | 258 | 1,226,170 | 211,571 | 1,526,908 | 300,655 | 239,667 | 17,477 | 776,656 | 54,675 | 1,393,816 | 91.28 | 133,092 | 60,246 | 72,833 | 144,750 |
| St. Louis, Brownsville & Mexico | 548 | 1,347,488 | 643,465 | 2,153,756 | 369,001 | 389,561 | 56,292 | 736,520 | 96,066 | 1,649,373 | 76.58 | 504,383 | 69,611 | 433,753 | —57,492 |
| St. Louis Merchants Bridge Terminal | 9 | ..... | 2,946 | 1,942,048 | 285,751 | 216,206 | 5,962 | 1,337,674 | 44,940 | 1,890,534 | 97.34 | 51,514 | 56,926 | —5,468 | —429,975 |
| St. Louis, San Francisco & Texas | 134 | 698,749 | 94,118 | 833,662 | 96,862 | 125,058 | 14,219 | 367,225 | 45,000 | 648,363 | 77.77 | 185,299 | 11,526 | 173,532 | —427,555 |
| St. Louis Southwestern of Texas | 814 | 2,566,054 | 1,043,484 | 3,846,320 | 804,498 | 896,231 | 87,747 | 1,841,016 | 171,743 | 3,801,101 | 98.82 | 45,219 | 136,694 | —91,742 | 132,991 |
| San Antonio & Aransas Pass | 732 | 1,433,677 | 628,358 | 2,261,959 | 396,783 | 568,970 | 48,954 | 1,259,173 | 114,939 | 2,387,401 | 105.54 | —125,442 | 105,000 | —231,704 | —144,754 |
| South Buffalo | 3,555 | 337,561 | ..... | 900,111 | 97,127 | 107,222 | 2,436 | 431,272 | 11,446 | 649,502 | 72.15 | 250,609 | 9,800 | 240,809 | —208,193 |
| Southern in Mississippi | 278 | 404,020 | 264,453 | 730,759 | 165,681 | 83,273 | 16,933 | 404,699 | 33,989 | 704,577 | 96.41 | 26,183 | 63,000 | —36,829 | 19,391 |
| Southern Pacific | 7,102 | 51,763,985 | 21,888,857 | 80,964,418 | 10,426,471 | 14,729,167 | 952,845 | 33,972,159 | 1,851,037 | 63,355,796 | 78.25 | 17,608,622 | 3,529,137 | 14,058,075 | —92,357 |
| Spokane Int. | 165 | 448,767 | 95,781 | 564,178 | 92,985 | 54,008 | 10,469 | 188,915 | 27,982 | 374,356 | 66.35 | 189,823 | 22,703 | 167,079 | —9,443,263 |
| Spokane, Portland & Seattle | 554 | 3,078,608 | 1,174,955 | 4,544,910 | 496,199 | 414,680 | 43,741 | 1,404,809 | 132,654 | 2,524,146 | 55.54 | 2,020,764 | 521,100 | 1,499,233 | 45,651 |
| Staten Island Rapid Transit | 23 | 420,167 | 449,013 | 980,091 | 179,890 | 140,704 | 9,852 | 519,461 | 53,069 | 902,975 | 92.13 | 77,117 | 68,000 | 9,095 | —81,949 |
| Tennessee Central | 293 | 974,501 | 496,188 | 1,540,463 | 307,051 | 282,008 | 23,386 | 659,868 | 54,483 | 1,326,795 | 86.12 | 213,668 | 37,758 | 175,790 | —143,943 |
| Texas & Pacific | 1,946 | 8,861,353 | 4,096,123 | 13,915,574 | 1,889,201 | 2,383,545 | 197,497 | 6,025,932 | 446,321 | 11,052,215 | 79.42 | 2,863,359 | 608,650 | 2,250,232 | —3,752 |
| Ulster & Delaware | 128 | 344,239 | 103,116 | 550,505 | 85,740 | 87,833 | 9,168 | 346,139 | 31,476 | 563,118 | 102.29 | —12,613 | 32,200 | —44,872 | —683,249 |
| Union R. R. of Pennsylvania | 35 | ..... | ..... | 3,631,410 | 362,187 | 1,140,510 | 1,405 | 2,116,466 | 36,010 | 3,656,423 | 100.69 | —25,012 | 50,703 | —75,721 | —146,501 |
| Utah Railway | 98 | 723,186 | 4,286 | 731,303 | 69,581 | 78,495 | 1,203 | 153,759 | 40,052 | 343,089 | 46.91 | 385,213 | 27,252 | 360,961 | —145,052 |
| Vicks. Shreve. & Pac | 171 | 803,208 | 416,984 | 1,397,184 | 163,081 | 274,515 | 37,991 | 523,169 | 52,981 | 1,079,170 | 77.24 | 318,014 | 68,041 | 249,704 | ..... |
| Western Pacific | 1,011 | 4,957,839 | 779,637 | 6,024,795 | 1,010,251 | 799,152 | 127,386 | 1,980,917 | 160,062 | 4,158,180 | 69.01 | 1,866,614 | 336,856 | 1,528,173 | —33,125 |
| Yazoo & Mississippi Valley | 1,382 | 8,809,053 | 2,345,514 | 11,669,005 | 1,588,296 | 2,482,649 | 113,932 | 4,626,801 | 321,758 | 9,119,861 | 78.15 | 2,549,144 | 433,199 | 2,114,771 | —229,850 —169,248 |

*And in 100 Per Cent Amounts?*

# Traffic News

The grain loaded by all the railroads during the period from July 1 to September 21 amounted to 367,886 cars, an increase of 106,000 as compared with the corresponding period of 1917, according to the weekly report made public by the Railroad Administration.

A towboat and three steel barges carrying 2,200 tons of grain and miscellaneous freight left St. Louis on Saturday, September 28, for New Orleans, the initial departure of the government service on the Mississippi river. The equipment at present consists of 5 towboats and 30 steel barges. Weekly departures from both St. Louis and New Orleans are contemplated, although the capacity of the carriers is very limited at present

### Inland Waterways Conference

Director General McAdoo has authorized G. A. Tomlinson, director of inland waterways of the Railroad Administration, to confer with owners and operators of boats engaged in general traffic on the inside water route between Philadelphia and Trenton and Beaufort, N. C., with the object of securing greater coordination and efficiency of operation. As a result, Mr. Tomlinson will hold such a conference in Washington on Friday, October 11, to which will be invited these owners and operators of boats and also representatives of the chambers of commerce of the cities along these waterways. Interested shippers in this region will be welcome to this meeting if they desire to attend.

### California Fruit Traffic

Shipments of California fresh fruits this year have broken all records, amounting to 15,004¾ cars to September 15 against 11,719¾ last year. Up to September 8, the excess of shipments this year amounts to 3,285 cars. A fourth more grapes than last year and nearly twice as many peaches as last year have been shipped. The California Fruit Distributors give the following comparisons of the totals of cars forwarded:

| | 1917 | 1918 |
|---|---|---|
| Cherries | 295 | 351 |
| Apricots | 403 | 440¾ |
| Pears | 4,111½ | 3,991½ |
| Peaches | 2,238 | 3,036½ |
| Plums | 2,598¼ | 2,478¾ |
| Grapes | 2,062½ | 4,683 |
| Miscellaneous | 11½ | 23¼ |
| Totals | 11,719¾ | 15,004¾ |

### Coal Production

Bituminous coal production during the week ended September 21, according to the Geological Survey report, is estimated at 12,650,000 net tons, or 19.4 per cent above that for the corresponding week of 1917. A strike in the anthracite fields caused a decrease in anthracite production of 11.3 per cent, the output being estimated at 1,847,000 net tons. The percentage of full time output lost on account of car shortage during the preceding week, according to the reports of bituminous operators, was 4.2 per cent.

A report by the Car Service Section of the Railroad Administration shows a total of 263,830 cars of all kinds of coal loaded during the week ended September 14, as compared with 233,880 in the corresponding week of 1917. The estimated total for the week ended September 21 was 259,295, as compared with 222,202 in the corresponding week of 1917. This makes the increase from January 1 to September 21 over the same period of 1917 a total of 607,070 cars.

The total coal produced in the United States in 1917, according to a report by the Geological Survey, was 651,402,374 net tons, as compared with 590,098,175 in 1916. These figures included 99,611,811 tons of anthracite in 1917 and 87,578,493 in 1916. The number of men employed in 1917 was 608,174, working an average of 251 days, as compared with 590,949 working an average of 235 days in 1916.

# Commission and Court News

## Interstate Commerce Commission

The commission has granted, with conditions, a request filed by Edward Chambers, traffic director of the Railroad Administration, for approval for the filing of tariffs on one day's notice making changes in rates, fares, etc., applying jointly between carriers under federal control and those not under federal control.

Counsel for the American Newspaper Publishers' Association and of several of the larger newspapers appeared at a hearing before the fifteenth section board of the Interstate Commerce Commission on October 1 to protest against the application of the American Railway Express Company for an increase in the express rates for the carriage of newspapers. The application for the increase was filed after the recent 10 per cent general advance in express rates granted by the commission and before the proposal for a new advance made by the director general of railroads.

## Personnel of Commissions

**Hon. George W. Anderson,** of Massachusetts, who has been a member of the Interstate Commerce Commission for about one year, has been nominated by President Wilson for appointment as United States circuit judge for the first circuit.

**Henry Thurtell,** attorney examiner for the Interstate Commerce Commission, has been appointed chief examiner, with office at Washington, succeeding **J. W. Carmalt,** resigned. **George M. Crosland** has been appointed chief of the Bureau of Tariffs, succeeding **J. W. Jones,** deceased.

## Court News

### Installation of Interlocking Plants

The Missouri Supreme Court holds that a contract wherein a railroad agrees to defray the expenses of construction and operation of "crossing signals and gates" at a crossing of its tracks with those of another railroad does not obligate the former to pay the cost of an interlocking plant. It also holds that where intersecting railroads were ordered by the Public Service Commission to install an interlocking plant, one road having a daily average of 16 trains over the crossing and the other six trains, an apportionment against the latter of 28.6 per cent of the cost of construction and maintenance was reasonable.—State ex rel. Chicago & Alton v. Commission (Mo.), 204 S. W., 531. Decided June 13, 1918.

### Tunnel Construction Contract Construed

The contract for building a tunnel provided that, if extras were furnished for which prices were not fixed in the contract, no payments should be made for them unless they had been ordered in writing by the railroad's chief engineer. Under the plans, the framework of the roof of the tunnel was to be supported by posts resting on the floor. The parties decided that it would be better to have short posts niched into the walls of the tunnel, instead of using longer ones resting on the floor of the tunnel; it being agreed that the cost of the work of cutting the niches for the short posts was equal to the difference between the cost of the long and the short posts and should be paid for as lumber. In an action by the contracting company against the railroad to recover compensation claimed for certain extra items of work done, material furnished, and expenses incurred, the Kansas Supreme Court holds that such work was not an "extra" within the meaning of the contract.—Lantry Contracting Co. v. Atchison, T. & S. F. (Kan.), 172 Pac. 527. Decided May 16, 1918.

# Equipment and Supplies

## Iron and Steel

THE ST. PAUL UNION DEPOT COMPANY, has ordered from the St. Paul Foundry Company 272 tons of structural steel for the new union station at St. Paul, Minn.

## Signaling

CHICAGO & ALTON.—A mechanical interlocking has been ordered from the General Railway Signal Company for Schoper, Ill.; 15 levers, and 5 spare spaces.

NORTHERN PACIFIC.—A Saxby & Farmer interlocking machine is to be put in at Jamestown, N. D. The material is to be furnished by the General Railway Signal Company.

LOUISVILLE & NASHVILLE.—Automatic block signals are to be installed on the line between Maplewood, Tenn., and Brentwood, 16 miles. The material has been ordered from the General Railway Signal Company.

LEHIGH VALLEY.—An electric interlocking, 16 levers, is to be installed at the drawbridge at Newark Bay, New Jersey. The machine, a model 2, unit lever type, together with other material, has been ordered from the General Railway Signal Company.

GREAT NORTHERN.—Automatic block signals are to be installed on 117 miles (single track). The material has been ordered from the General Railway Signal Company. The signals will be single arm, upper quadrant, three-position, top-of-the-mast, model 2-A.

CHICAGO, BURLINGTON & QUINCY.—Material with which to enlarge the electric interlocking at Hawthorne, Ill., from 56 levers to 96 levers has been ordered from the General Railway Signal Company. Complete new locking will be provided; also lever lights, detector locks and approach and route locking.

PENNSYLVANIA LINES WEST OF PITTSBURGH.—An electric interlocking machine, 51 working levers, and 13 spare spaces, is to be installed at Richmond Junction, Ind. The material has been ordered from the General Railway Signal Company. The machine will have lever lights. Approach and sectional release route locking will be provided. This plant will be installed by the signal company.

---

ANOTHER AMERICAN STEEL COMPANY IN BRAZIL.—By a decree dated August 7, 1918, the president of Brazil has authorized the American Steel Company's Brazilian corporation to operate in this country. This is a branch of the American Steel Export Company of New York city. The objects of the company are the manufacture of iron, steel, manganese, copper, and other metals and their alloys, the purchase and sale of metal products, and the purchase and exploitation of mines and timber lands of all kinds. The capital stock of the company's branch is $20,000, divided into 200 shares of $100 each.—*Commerce Reports.*

RAILWAY SERVICE SUSPENDED FOR THE WAR.—Not the least interesting chapter in the history of British railway operation during the war is that relating to the closing of stations and branch lines "for the duration." The total number of stations and the mileage affected is by no means inconsiderable, and the suspension is of two natures; either no public traffic is handled at all, or the week-day services are maintained, while the line or station is closed on Sundays. On the South-Eastern & Chatham, for instance, both systems have been adopted. Some of the South-Eastern & Chatham stations in the London district have been closed up entirely, while on other sections, as for example, the Dunton Green and Westerham branch, the normal week-day service is maintained, but there are no Sunday trains. On the same line there are also stations which are closed for passenger traffic, excluding troop trains and specials, but which still handle certain classes of freight traffic.—*Railway Gazette, London.*

# Supply Trade News

**Horace N. Trumbull,** advertising manager of the SKF Ball Bearing Company, of Hartford, Conn., has entered the Reserve Officers' Training Camp, at New Haven, Conn.

**M. F. Covert,** assistant master car builder of Swift & Co., Chicago, has been appointed sales manager of the Chicago and northwest territory of the Standard Car Construction Company, with office in the Peoples Gas building, at Chicago.

**F. O. Bunnell,** chief engineer of the Southern Wheel Company, St. Louis, Mo., and formerly engineer of tests on the Chicago, Rock Island & Pacific, has been elected vice-president of the Southern Wheel Company, with headquarters at St. Louis.

**A. E. Brown,** former general agent of the Chicago & Alton, at Detroit, Mich., and previously in the same capacity for the Denver & Rio Grande and the Western Pacific at that point, has been appointed manager of the railroad department of the Truscon Steel Company.

**J. M. Hopkins,** chairman of the board of the Camel Company, Chicago, has been appointed a member of the priorities committee of the War Industries Board. Mr. Hopkins will handle export matters except those for Japan and for the allied governments having war missions.

**The Locomotive Pulverized Fuel Company,** New York, has received an order from Morris & Company, packers, covering the installation of complete apparatus for pulverizing, distributing and burning powdered coal, to be installed in the company's plant at Oklahoma City, Okla.

**The Ayer & Lord Tie Company, Inc.,** Chicago, has discontinued its creosoted wood block department and has turned over that portion of its business and practically all of its selling force to the Republic Creosoting Company, Indianapolis, Ind. W. H. Blythe, of the Ayer & Lord Tie Company, will have charge of the block department of the Republic Creosoting Company.

**Robert C. Byler,** for nearly four years advertising production man for the SKF Ball Bearing Company, of Hartford, Conn., has been appointed advertising manager of the SKF Administrative Company of New York City, and will direct the advertising of the SKF Ball Bearing Company of Hartford, the Hess-Bright Manufacturing Company of Philadelphia, and the Atlas Ball Company of the same city, all of which are controlled by the SKF Administrative Company. Until arrangements are made in New York, Mr. Byler will remain with the SKF Ball Bearing Company of Hartford, Conn.

## Trade Publications

PULVERIZED FUEL.—The Locomotive Pulverized Fuel Company, New York, in Bulletin No. 6, describes results obtained from burning coal under stationary boilers with the "Lopulco" pulverized fuel system.

GUN IRON.—Why Railroads Use Hunt-Spiller Gun Iron, is the title of an eight-page booklet published by the Hunt-Spiller Manufacturing Corporation, South Boston, Mass. It contains a brief discussion of the merits of gun iron which led to recognition of its value in locomotive construction several years ago.

TRAIN OPERATION BY SIGNAL INDICATION.—This is the title of a pamphlet, 8½ in. x 11 in., issued by Henry M. Sperry, 120 Broadway, New York city, and containing a reprint of his article describing the block signal practice on the Susquehanna division of the Erie Railroad, published in the *Railway Age* of July 5, last. Mr. Sperry's "constituents"—the Union Switch & Signal Company, the General Railway Signal Company, the Federal Signal Company and the Hall Switch & Signal Company—announce on the last page that other bulletins of this kind will be issued from time to time.

*You Must Buy Bonds to Your Limit.*

# Railway Construction

CHICAGO & ALTON.—A contract has been given to Stresenreuter, Cotton & Co., Chicago, for construction of 14 one-story bunk houses, for Mexican laborers. Each house will be 20 ft. by 60 ft., containing four rooms and a court through the center somewhat after Mexican style. The walls will be hollow tile and the floors concrete. The new buildings will be located at Dwight, Ill.; Chenoa, Elkhart, Sherman, Fancy Prairie, Auburn, Godfrey and Yeomans.

ILLINOIS CENTRAL.—This road has awarded a contract to T. S. Leake & Co., Chicago, for the construction of an extension to a freight house at Rockford, Ill., to cost about $25,000. It will be a one-story brick structure, 32 ft. by 148 ft., with a slate roof and a platform on three sides, 10 ft. wide on one side and 8 ft. in width on the other two sides. The building will have a plank floor on a concrete base and the platform will be protected by a canopy covered with Paroid roofing.

INDIANAPOLIS UNION RAILWAY.—This road will build a passenger train shed at Indianapolis, Ind., in connection with the track elevation work it is doing in that city. The general contract for the construction of the train shed, exclusive of steel work and the foundation, has been awarded to Latham & Walters, general contractors, Indianapolis. Price & McLanahan, Philadelphia, Pa., are the architects. The work to be done under the general contract will amount to approximately $900,000.

PENNSYLVANIA RAILROAD, WESTERN LINES.—This road has commenced the construction of car repair shops at Fifty-ninth and Leavitt streets, Chicago. The buildings which will be erected will be of brick and reinforced concrete construction and will include a machine shop, a general service and office building, a wood shop, a door shop, a paint shop, a fire station and a supply shed. In addition an ice house and the fan house for a smoke collecting system are being erected on the same property. Charles B. Johnson & Sons, Chicago, have the contract for the building construction and incidental track work will be done by the railroad's own forces.

PHILADELPHIA & READING.—Work is now being carried out on a new engine yard near Essington, Pa., on the Chester branch to be known as the Darby creek engine yard. This will consist of a one-story engine house of brick and concrete construction, 72 ft. 8 in. wide by 211 ft. long and 26 ft. high, with a continuous monitor with ventilating sash. Lean-to structures, 25 ft. wide and 211 ft. long, will be provided to be used for powerhouse, machine shop, storeroom and office. The engine house will have two longitudinal inspection pits and a wheel jack pit, with hoist. The yard will also include a 100-ft. turntable, with tractor, which will have a reinforced concrete substructure; a concrete storage pit, 10 ft. wide by 173 ft. long and 10 ft. deep, with a steel trestle track support; a concrete ash water pit, 4 ft. wide by 200 ft. long and 5 ft. deep; a concrete inspection pit, 4 ft. wide by 76 ft. long and 3 ft. 6 in. deep; two 47,000-gal. wooden tanks on concrete, and brick substructures, 21 ft. wide, 46 ft. 2 in. long and 26 ft. high; two concrete water column pits, 8 ft. 6 in. wide, 16 ft. long and 8 ft. deep; a concrete pump house, 14 ft. wide, 19 ft. long and 10 ft. deep, with a pump pit, 14 ft. wide by 19 ft. 6 in. long and 32 ft. deep, and a concrete intake well of 10 ft. diameter and 27 ft. deep.

SAN DIEGO & ARIZONA.—This road has been completed from San Diego, Cal., east about 95 miles, and from El Centro, on the Southern Pacific, west, about 31 miles, leaving a gap of approximately 10 miles, upon which construction work is now going on. These 10 miles are in the canyon of Carriso creek, where 17 tunnels are being built, the longest of which is 2,612 ft., and the next longest 2,534 ft., the total length of all the tunnels being 2.6 miles. The road when completed will give San Diego a direct line to the East.

# Railway Officers

## Railroad Administration

### General

**William W. Morris,** formerly of the purchasing department of the Pennsylvania, at Philadelphia, has been appointed secretary of the Central Advisory Purchasing Committee, with office at Washington, D. C.

### Regional

**F. S. Wilcoxen,** special representative of the Perolin Railway Service Company at Chicago, has been appointed assistant fuel supervisor of the Northwestern region of the Railroad Administration, with headquarters at Portland, Ore. Mr. Wilcoxen's biography and picture were published in the *Railway Age* of January 4, 1918.

### Federal and General Managers

**E. E. Calvin,** federal manager of the Union Pacific, the Oregon Short Line, the St. Joseph & Grand Island, the Los Angeles & Salt Lake and the Ogden Union Railway & Depot Company, has had his jurisdiction extended over the Leavenworth Depot & Railroad.

**W. B. Storey,** federal manager of the Atchison, Topeka & Santa Fe, the Pan Handle & Santa Fe, the Rio Grande, El Paso & Santa Fe, the Kansas Southwestern and the Grand Canyon, has had his jurisdiction extended over the Atchison Union Depot & Railroad and the Pueblo Union Depot & Railroad, effective September 24.

**G. R. Huntington,** federal manager of the Minneapolis, St. Paul & Sault Ste. Marie, the Duluth, South Shore & Atlantic, the Copper Range, the Lake Superior Terminal & Transfer, and the Mineral Range, has had his jurisdiction extended over the Mackinac Transportation Line and the Sault Ste. Marie (Mich.) union depot, effective September 24.

**C. G. Burnham,** federal manager of the Chicago, Burlington & Quincy, the Quincy, Omaha & Kansas City, the Toledo, Peoria & Western (west of Peoria including the Peoria terminals), the Rockport, Langdon & Northern, the Rapid City, Black Hills & Western and the Davenport, Rock Island & Northwestern, has had his jurisdiction extended to include the Keokuk Union Depot.

The authority of **Charles H. Ewing,** federal manager of the Philadelphia & Reading, the Central of New Jersey, the New York & Long Branch, the Atlantic City Railroad and the Port Reading Railroad, with office at Philadelphia, Pa., has been extended over the Baltimore & Ohio Railroad New York Terminals, the Baltimore & New York Railroad and the Staten Island Rapid Transit Railroad.

### Operating

**T. F. Dixon,** trainmaster on the Great Northern, at Everett, Wash., has been promoted to superintendent of the Butte division, with headquarters at Great Falls, Mont., succeeding **F. Wear,** promoted, effective September 18.

**J. W. Allen,** acting division superintendent of the Northern Pacific, with office at Seattle, Wash., has been appointed superintendent of the Puget Sound division, with headquarters at Seattle, vice **J. J. McCullough,** assigned to other duties.

**I. H. Luke,** vice-president and general manager of the Utah Railway, Salt Lake City, Utah, has been appointed general superintendent of the Denver & Rio Grande, Utah lines, with headquarters at Salt Lake City, effective October 1. The office of assistant general manager of the Denver & Rio Grande at Salt Lake City has been abolished.

The following officers on the Oregon-Washington Railroad & Navigation Lines have had their jurisdiction extended

over the Southern Pacific, north of Ashland, and the Pacific Coast Railroad: **S. A. Hering,** car service agent; **E. A. Klippel,** superintendent of telegraph, and **E. B. Wood,** chief special agent; all with headquarters at Portland, Oregon.

**E. J. Henry,** assistant manager of the marine department, division of operations of the United States Railroad Administration, with office at Washington, D. C., has been appointed supervisor, rail and lake traffic, Allegheny and Eastern regions, with jurisdiction over the Lehigh Valley Transportation Line and the interchange of business of other Lake Lines with railroads of the administration at Eastern lake ports. His headquarters are at the Lehigh Valley passenger station, Buffalo, N. Y.

**George M. Smith,** who has been appointed superintendent of the Delaware division of the Pennsylvania Railroad, with office at Wilmington, Del., as has already been announced in these columns, was born on October 9, 1866, in Baltimore county, Md., and was educated in the public schools. He began railway work in 1881 as a brakesman on the Baltimore & Potomac, now the southern portion of the Baltimore division of the Pennsylvania Railroad. On July 13, 1883, he was made flagman, and on February 13, 1885, he was promoted to freight conductor. He was transferred to passenger conductor on April 30, 1894, which position he held until January 15, 1911, when he was appointed assistant trainmaster of the Maryland division, at Perryville, Md. He was appointed freight trainmaster of the Maryland division on February 1, 1915, with headquarters at Wilmington, Del., and three years later was promoted to assistant superintendent of the Maryland division at Lamokin, Pa., which position he held until his recent appointment as superintendent of the Delaware division, as above noted.

G. M. Smith

**George Bradshaw,** safety engineer of the Grand Trunk and the Grand Trunk Pacific, with headquarters at Toronto, Ont., has been appointed supervisor of safety of the Pere Marquette, the Ann Arbor, the Detroit & Toledo Shore Line, the Fort Street Union Depot, the Lake Michigan Car Ferry Association, the Grand Trunk-Western Lines, the Detroit & Mackinac, the Detroit, Bay City & Western, the Port Huron Southern, and the Port Huron & Detroit, effective September 25. Office at Detroit, Mich.

## Financial, Legal and Accounting

**Joe Marshall** has been appointed freight claim agent on the Missouri, Kansas & Texas Railroad of Texas, with headquarters at Dallas, Tex., effective September 16.

**Robert Adams,** assistant auditor of the Southern Pacific, has been appointed assistant general auditor of the lines south of Ashland, Ore., and assistant federal auditor of the lines north of Ashland, with headquarters at San Francisco, Cal.

**J. J. Hooper** has been appointed freight claim agent, with headquarters at Washington, D. C., with general charge of loss and damage freight claims over all lines under the jurisdiction of **E. H. Coapman,** federal manager, with the exception of the Piedmont & Northern, and the Baltimore & Ohio (segregated line between Harrisonburg and Lexington, Va.).

**J. O. Talbott,** assistant general auditor of the Pere Marquette, the Grand Trunk, western lines, the Detroit & Toledo Shore Line and the Fort Street Union Depot Company, with office at Detroit, Mich, has been appointed acting federal auditor of all the above roads, also of the Ann Arbor, the Lake Michigan Car Ferry Association, the Detroit & Mackinac, the Detroit, Bay City & Western, the Port Huron Southern and the Port Huron & Detroit, vice **C. S. Sikes,** who has resigned as general auditor to take service with the Pere Marquette Railway Company (Corporation).

## Traffic

**J. J. Byrne,** general eastern agent of the Delaware, Lackawanna & Western, with office at New York, has been appointed assistant general freight agent; **W. F. Griffitts,** general passenger agent, has been appointed assistant general passenger agent; **A. B. Wallace,** assistant general freight agent, has been appointed chief of tariff bureau, and **T. J. McGeoy** has been appointed foreign freight agent; all with headquarters at New York.

**O. A. Constans,** freight traffic manager of the Baltimore & Ohio, western lines, with office at Chicago, has been appointed assistant traffic manager (freight); **B. N. Austin,** general passenger agent, at Chicago, has been appointed assistant traffic manager (passenger); **S. T. McLaughlin,** assistant freight traffic manager, at Cincinnati, O., has been appointed assistant to traffic manager, and **Edward Hart, Jr.,** western general freight agent, at St. Louis, Mo., has been appointed assistant general freight agent.

**Harry Parry,** who has been appointed general passenger agent of the New York Central, lines east, and the West Shore Railroad, with headquarters at New York, as has already been announced in these columns, began railway work in 1883, as a messenger in the traffic manager's office of the Great Western Railway, at Hamilton, Ont. The following year he became stenographers in the rate department and subsequently served in the freight claim department until the consolidation of that road with the Grand Trunk. From January to April, 1885, he was stenographer in the freight claims department of the Grand Trunk, at Montreal, Que., and then to the following September was stenographer to the general freight and passenger agent on the Northern & North Western, at Toronto, Ont. He then served as clerk to the general agent in the passenger department and assistant city passenger and ticket agent on the West Shore at Buffalo, N. Y., until December, 1885, when he took a similar position with the New York Central & Hudson River under consolidation arrangement. In May, 1889, he was appointed city passenger and ticket agent of the New York Central and the West Shore, at Buffalo, and in March, 1897, he was appointed general agent of the passenger department of the same lines, at Buffalo. In January, 1916, he was promoted to assistant general passenger agent, which position he held at the time of his recent appointment as general passenger agent of the same lines as above noted.

H. Parry

## Engineering and Rolling Stock

**J. Q. Barlow,** assistant chief engineer, and **R. M. Drake,** maintenance of way assistant to the chief engineer on the Southern Pacific, Pacific system, have resigned.

The jurisdiction of **J. F Graham,** superintendent of motive power of the Oregon-Washington Railroad & Navigation Company, with office at Portland, Ore, has been extended over the Southern Pacific north of Ashland, and the Pacific Coast Railroad.

**Fred W. Bender,** chief clerk in the signal department of the Central Railroad of New Jersey, with headquarters at

Elizabeth, N. J., has been promoted to assistant signal engineer of that road and the New York & Long Branch, effective September 25, succeeding **J. S. Longworth,** deceased.

**John C. Wrenshall, Jr.,** division engineer of the Philadelphia & Reading, with office at Reading, Pa., has been transferred to the New York division, with headquarters at Philadelphia; **W. D. Kenzie,** division engineer at Tamaqua, succeeds Mr. Wrenshall; **John S. Goodman,** division engineer at Harrisburg, succeeds Mr. Kenzie, and **N. W. H. Schafer, Jr.,** supervisor at Lebanon, has been appointed division engineer at Harrisburg, succeeding Mr. Goodman.

**Harry G. Clark,** whose appointment as chief engineer of the Chicago, Rock Island & Pacific, with headquarters at Chicago, was announced in the *Railway Age* of September 27, was born at Leavenworth, Kan., on July 8, 1875. Mr. Clark graduated from the civil engineering course at the University of Kansas in 1898. In September of that year he entered the service of the Atchison, Topeka & Santa Fe as chainman on its Kansas lines. Subsequently he was a rodman on construction and transitman on location with the Chicago, Burlington & Quincy in Iowa; from October, 1900, to September, 1905, he was successively resident engineer and division engineer on the western division of the Choctaw, Oklahoma & Gulf, now a part of the Rock Island, and division engineer of the Pan Handle and Arkansas divisions of the Rock Island. From September, 1905, to October, 1909, he was first district engineer on the Choctaw district, and from the latter date to June, 1912, trainmaster on the Arkansas and Oklahoma divisions. Mr. Clark was then appointed assistant to the second vice-president, and later he held the same position under the first vice-president in charge of operation. On August 1, 1918, he was appointed general supervisor of maintenance of way, which position he held at the time of his appointment as chief engineer, as mentioned above.

H. G. Clark

## Corporate

### Executive, Financial, Legal and Accounting

**E. O. McCormick,** vice-president in charge of traffic of the Southern Pacific, under private control, with headquarters at San Francisco, has been granted a leave of absence.

**J. G. Drew,** vice-president of the Missouri Pacific, with headquarters at St. Louis, Mo., has been elected also president of the Natchez & Southern, with the same headquarters.

**Marvin Hughitt, Jr.,** vice-president in charge of operation of the Chicago & North Western, under private control, continues as vice-president in the corporate organization. **John D. Caldwell,** secretary, has been elected secretary and assistant treasurer of the corporation. **Lewis A. Robinson,** controller under private ownership, has been appointed controller of the corporation. **J. F. Cleveland,** general right-of-way agent, has been appointed land commissioner for the corporation. The headquarters of these officers are at Chicago.

**Henry Ruhlender,** chairman of the board of the St. Louis-San Francisco, has been also elected president of the corporation, with headquarters at New York. **C. W. Hillard,** fourth vice-president, is second vice-president and treasurer of the corporate organization, with headquarters at New York. **T. A. Hamilton,** secretary and treasurer, has been elected third vice-president and controller of the corporation, with headquarters at St. Louis, Mo. **S. J. Fortune,** assistant to the auditor under private control, has been made secretary and assistant treasurer, with headquarters at St. Louis. **W. A. McAuliffe** has been appointed assistant treasurer at New York, and **F. H. Shaffer** has been appointed traffic and transportation agent at St. Louis.

**Edward H. Lee,** who has been elected president of the Chicago & Western Indiana, and the Belt Railway of Chicago, was born at Dayton, Ohio. He attended Ohio State University in 1877, 1878 and 1879, and the University of Wooster during 1883 and 1884. He began railway work in 1880 on the Scioto Valley as a rodman and subsequently to 1887 was on various roads as instrument man, assistant engineer and resident engineer, including the New York, Chicago & St. Louis, the Wisconsin Central and the Union Pacific. He then went to the Elgin, Joliet & Eastern as office engineer. From 1889 to 1893 he was chief engineer of that road. Mr. Lee was engaged in private practice as an engineer and superintendent for contractors and in charge of field work for the Sanitary District of Chicago from 1893 to 1898. Since 1898 he has been chief engineer of the Chicago & Western Indiana and the Belt Railway of Chicago. Since March, 1914, he has been vice-president also. He has now been elected president of these companies, as mentioned above.

E. H. Lee

### Engineering and Rolling Stock

**J. R. Leighty,** engineer maintenance of way of the Missouri Pacific, at Kansas City, Mo., has been appointed chief engineer of the corporation, with headquarters at St. Louis, Mo.

**E. G. Hawkins,** power engineer on the New York Central, lines east of Buffalo, with headquarters at Albany, N. Y., has been appointed signal engineer of the corporation, with headquarters at New York City.

**E. H. Lycett,** general accountant on the Missouri Pacific, with headquarters at St. Louis, Mo., has been elected secretary and treasurer of that corporation and of the Natchez & Southern, with the same headquarters.

**P. J. Neff,** district engineer of the St. Louis-San Francisco, at Springfield, Mo., under private control, has been appointed engineer for the corporation, with headquarters at St. Louis, Mo.

## Obituary

**Samuel P. Shane,** formerly freight traffic manager of the Erie, with headquarters at Chicago, died on September 24, at Cleveland, Ohio. Mr. Shane was in the service of the Erie for more than 25 years. He left railroad service in 1908 to go into other business and, at the time of his death, was president of the Great Lakes Towing Company at Cleveland. Mr. Shane was born in Pittsburgh, Pa., on May 31, 1857, and entered railway service in 1871. Subsequently he served in various capacities on the Pittsburgh, Cincinnati & St. Louis, the New York, Lake Erie & Western, now a part of the Erie, and the Erie. In February, 1903, he became freight traffic manager of the last-named road. Six years later he resigned to become general manager of the Gilchrist Transportation Company at Cleveland, and later became president of the Great Lakes Towing Company, which position he held at the time of his death.